NOKIA
CONSUMER ELECTRONICS

Service–Manual

VR

1993

NOKIA

V12153

VCR 3714 VPS/SV
VCR 3714 SV

Schaltbilder, Leiterplatten, Ersatzteile–Liste, Elektrischer Abgleich.

Mechanik–Justagen siehe nächste Seite.

Sicherheitsbauteil!

⚠ Dieses Symbol kennzeichnet in den Schaltbildern alle Bauteile, die nur durch Originalteile ersetzt werden dürfen.

Bei Reparaturen gültige Sicherheitsvorschriften beachten!

Circuit diagrams, P. C. B., spare parts list, electrical alignment.

Mechanical adjustments see next page.

Safety Component!

⚠ This symbol identifies in the circuit diagrams all safety critical parts. Replace only with specified part numbers.

Service and repair work to be performed only in accordance with existing safety regulations!

Schémas, circuits imprimés, liste des pièces détachées, alignement.

Mécanique ajustages voir page suivante.

Composant de protection!

⚠ Ce symbol indique tous les composants dans les schémas, qui doivent être remplacés uniquement par des pièces d'origines.

Pendant le dépannage, respecter les régulations du sécurité!

Änderungen vorbehalten Modifications reserved Modifications réservées

6611 74 44 (9347) SA

Liste der Service-Manuale **List of Service Manuals** **Liste des manuals** **Modell** **Model** **Modèle**	Elektrischer Abgleich, Schaltbilder, Leiterplatten, Ersatzteile-Liste Electrical alignment, circuit diagram, P.C.B., spare parts list Alignment, schèmas circ. imprimès, liste des pièces dètachèes **No.**	Mechanik-Justagen Mechanical adjustments Mèchanique ajustages **No.**
NOKIA VCR 3704 VPS NOKIA VCR 3704 NOKIA VCR 3704 EE	6611 74 35	6611 74 46 **NOTE!** Manual 6611 74 46 is only a supplement for the '93 models. The Basic Manual is 6611 77 06. (1990).
LUXOR VCR 4704 SALORA VCR 624	6611 74 36	
NOKIA VCR 3744 VPS/SV NOKIA VCR 3744 SV NOKIA VCR 3744 UK/VP	6611 74 37	
LUXOR VCR 4744 SV SALORA VCR 824 SV	6611 74 38	
NOKIA VCR 3764 HIFI VPS NOKIA VCR 3764 HIFI N	6611 74 39	
LUXOR VCR 4764 HIFI N SALORA VCR 914 HIFI N	6611 74 40	
NOKIA VCR 3784 HIFI VPS/SV NOKIA VCR 3784 HIFI N/SV NOKIA VCR 3784 HIFI UK/VP	6611 74 41	
LUXOR VCR 4784 HIFI N/SV SALORA VCR 924 HIFI N/SV	6611 74 42	
NOKIA VCR 3724 UK/VP NOKIA VCR 3724 IR/VP	6611 74 43	
NOKIA VCR 3714 VPS/SV NOKIA VCR 3714 SV	6611 74 44	
NOKIA VCR 3784 HIFI IR/VP	6611 74 45	

NOKIA
CONSUMER ELECTRONICS

Notice

VR

NOKIA European Service Center
Information and Training Center
Meesmannstr. 105-107

D-44807 Bochum

VR 3714 SV
VR 3714 VPS SV

1993

Manual: 6611 7444

Correction:
part-no. of the **VP-1** PCB :
6913 6666 ➪ wrong
6913 4555 ➪ correct

Änderung:
Bestell-Nr. der **VP-1** Platine:
6913 6666 ➪ falsch
6913 4555 ➪ richtig

Änderungen vorbehalten Modifications reserved

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2. ELECTRICAL ADJUSTMENT 8
3. TEST POINT FOR TAPE PATH ADJUSTMENT 16
4. PARTS LIST 18
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   PACKING MATERIALS 18
   CABINET & CHASSIS PARTS 18
   MECHANISM PARTS 19
   ELECTRICAL PARTS 22

CIRCUIT DIAGRAMS (Refer to the separate volume)

1. DISASSEMBLY

1-1. REMOVAL OF CABINET, MECHANISM UNIT AND MAIN BOARD

REMOVING THE CABINET PARTS (Fig. 1.1.1)

1. Remove the cabinet and bottom cover by removing the four screws (A) and five screws (B).
2. Remove the front panel by removing the locks of the clamps (C) using a screwdriver, etc. and slightly rotating the bottom part in the direction of the arrow.

NOTE: Electrical adjustments for the this model can be performed with only the cabinet removed.

REMOVING THE MECHANISM MAIN UNIT (Fig. 1.1.2)

After removing the cabinet parts:

1. Remove the two screws (D), and then remove the bracket.
2. Remove the 29-wire flat cable from the MC-2 PWB, and then remove the 8-wire flat cable from the VP-1 PWB Ass'y.
3. Remove the mechanism main unit by removing the two screws (E) and two screws (F).
   Remove, as well, the two screws (G) at the cassette tray side while pressing the tray lock lever as shown in the enlarged view and pushing the cassette tray to the position where the two screws (G) appear.

REMOVING THE CP-1 PWB ASSEMBLY (Fig. 1.1.3)

After removing the cabinet parts and the mechanism unit:

1. Pull out the TM-1 PWB Ass'y from CN301 and CN302 while pressing and spreading out the four clamps (H) as shown by the arrows.
2. Remove the holder set to the opening of the chassis, while pressing the clamp in the direction of the arrow.
3. Remove the two red screws (J). Next, remove the CP-1 PWB Ass'y by lifting it straight up while pressing and spreading out the two clamps (K) as shown by the arrows.

TP4/GIT-1

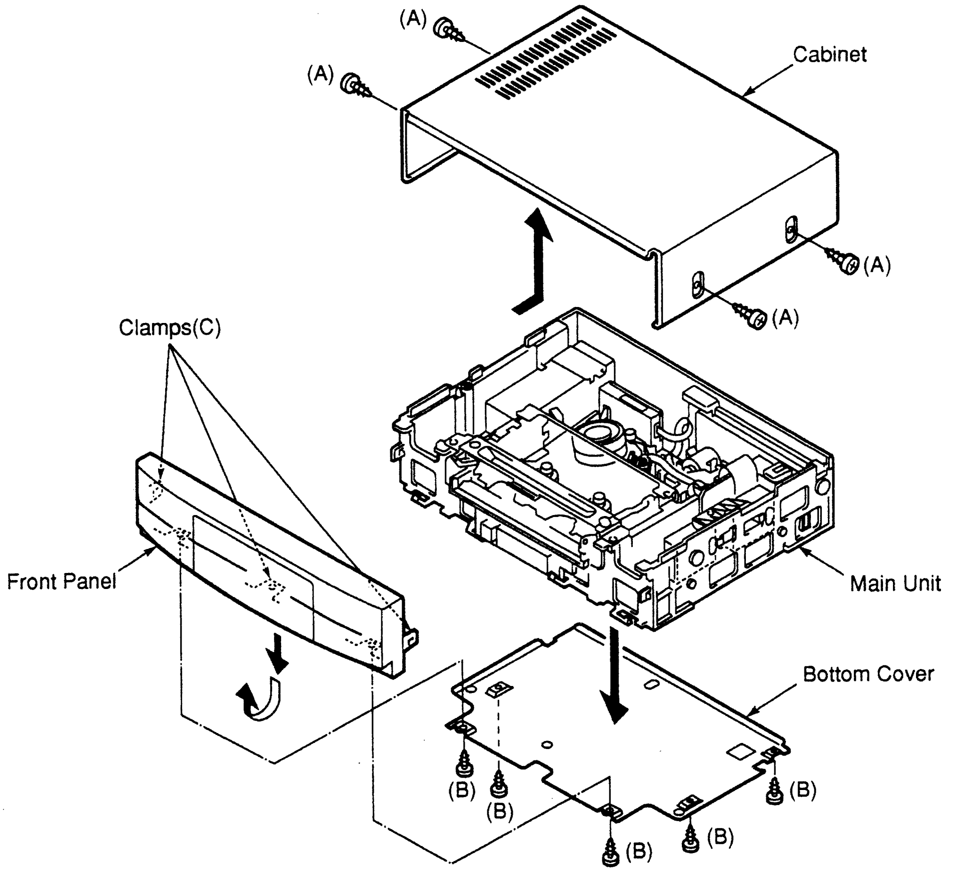


Fig. 1.1.1

M-TP4/IR-2

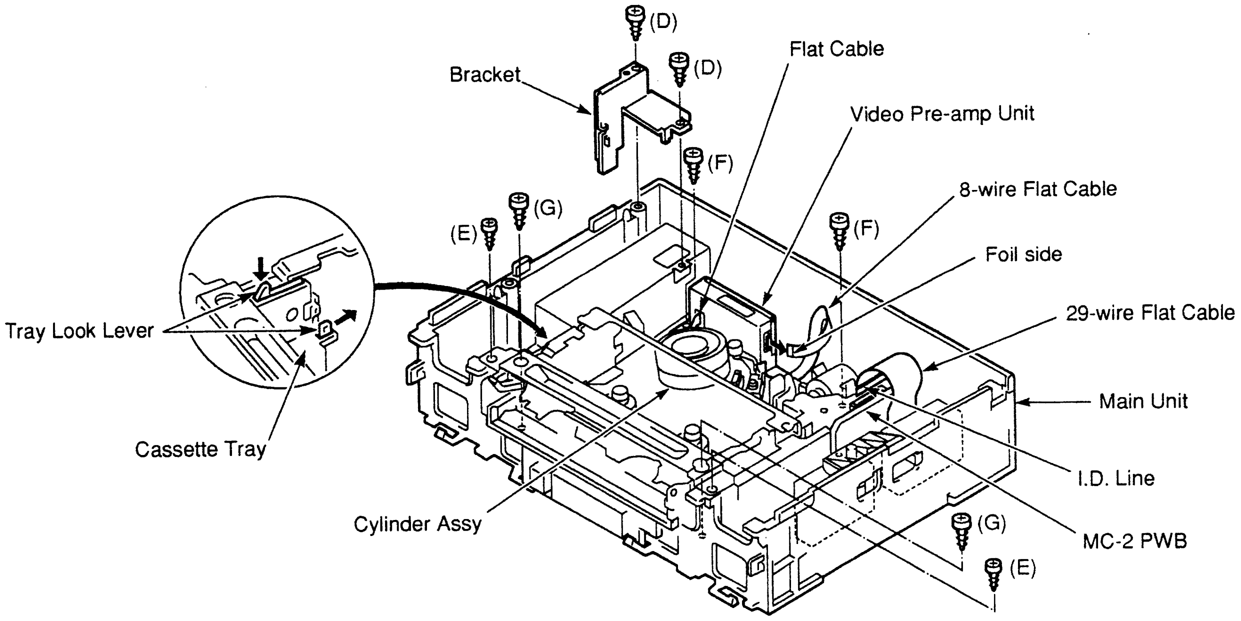

(D)
(D)
Bracket
Flat Cable
Video Pre-amp Unit
(F)
8-wire Flat Cable
(G)
(E)
(F)
Foil side
29-wire Flat Cable
Tray Look Lever
Main Unit
Cassette Tray
I.D. Line
Cylinder Assy
(G)
MC-2 PWB
(E)

Fig. 1.1.2

M-TP4/IR-3

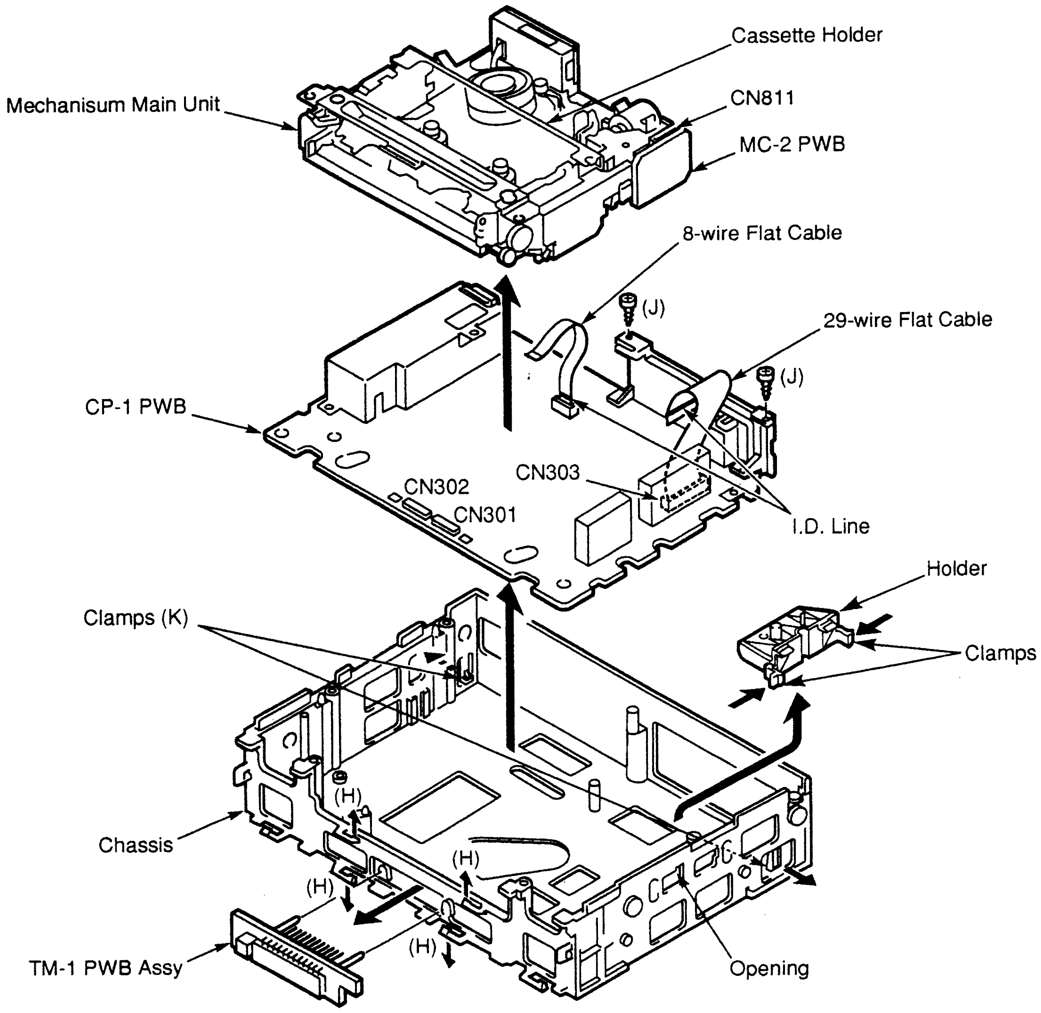

Cassette Holder
Mechanisum Main Unit
CN811
MC-2 PWB
8-wire Flat Cable
(J)
29-wire Flat Cable
(J)
CP-1 PWB
CN303
CN302
CN301
I.D. Line
Holder
Clamps (K)
Clamps
(H)
Chassis
(H)
(H)
(H)
TM-1 PWB Assy
Opening

Fig. 1.1.3

TEMPORARILY SETTING UP AND CONNECTING MAIN PWB ASSEMBLY

The following is an example of how to place and connect the main PWB not requiring a jig, when repairing the CP-1 PWB assembly (Fig. 1.1.4)

1. Place the mechanism main unit at the fixed position on the chassis.
2. Connect the 29-wire flat cable to the MC-2 PWB, and the 8-wire flat cable to the VP-1 PWB Ass'y respectively. Connect the TM-1 PWB Ass'y to operate the VCR by using the remote control.
3. Place the CP-1 PWB Ass'y above the mechanism main unit along the cassette holder. Insert the tip (L) of the terminal board into the opening (M) at the side of the chassis, as shown in the enlarge view.

M-TP4/IR-4

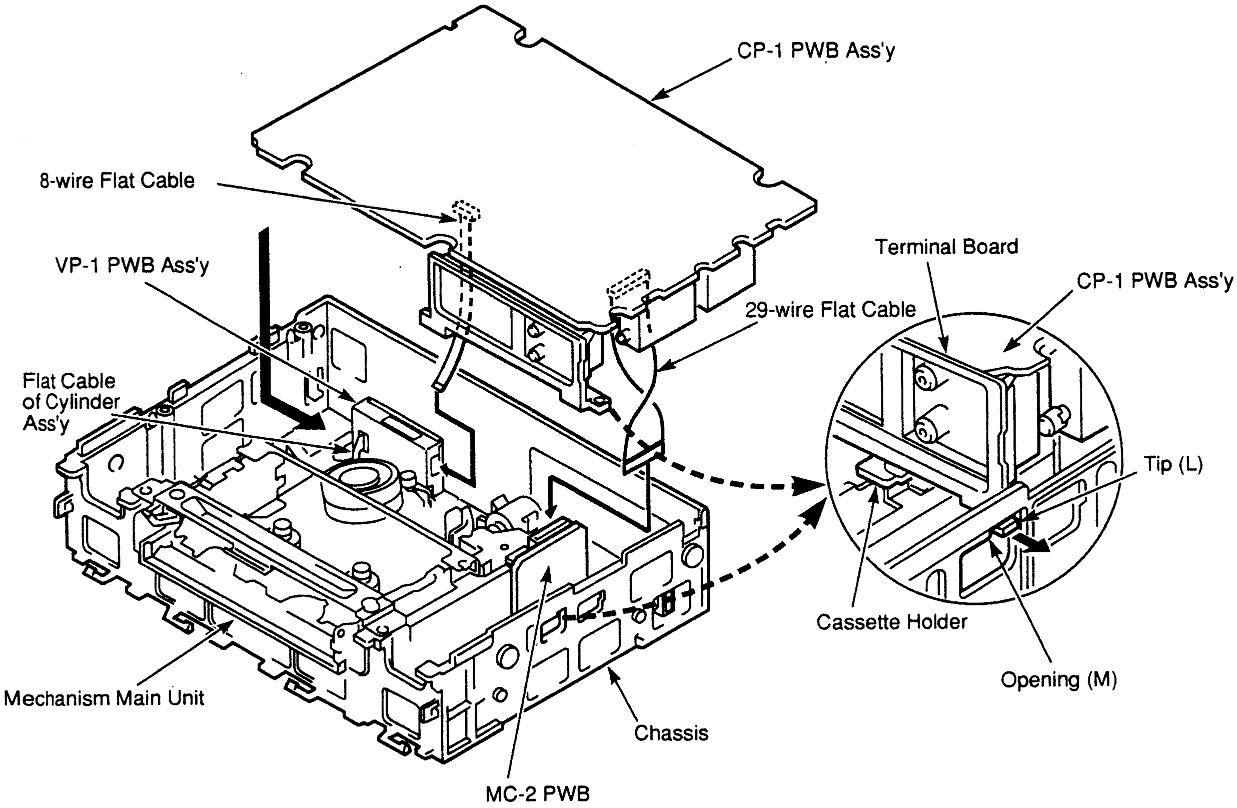

CP-1 PWB Ass'y
8-wire Flat Cable
VP-1 PWB Ass'y
Flat Cable of Cylinder Ass'y
Terminal Board
CP-1 PWB Ass'y
29-wire Flat Cable
Tip (L)
Cassette Holder
Opening (M)
Mechanism Main Unit
Chassis
MC-2 PWB

Fig. 1.1.4

1-2. MAIN CIRCUIT BOARD LOCATIONS

L-TP4/GIT

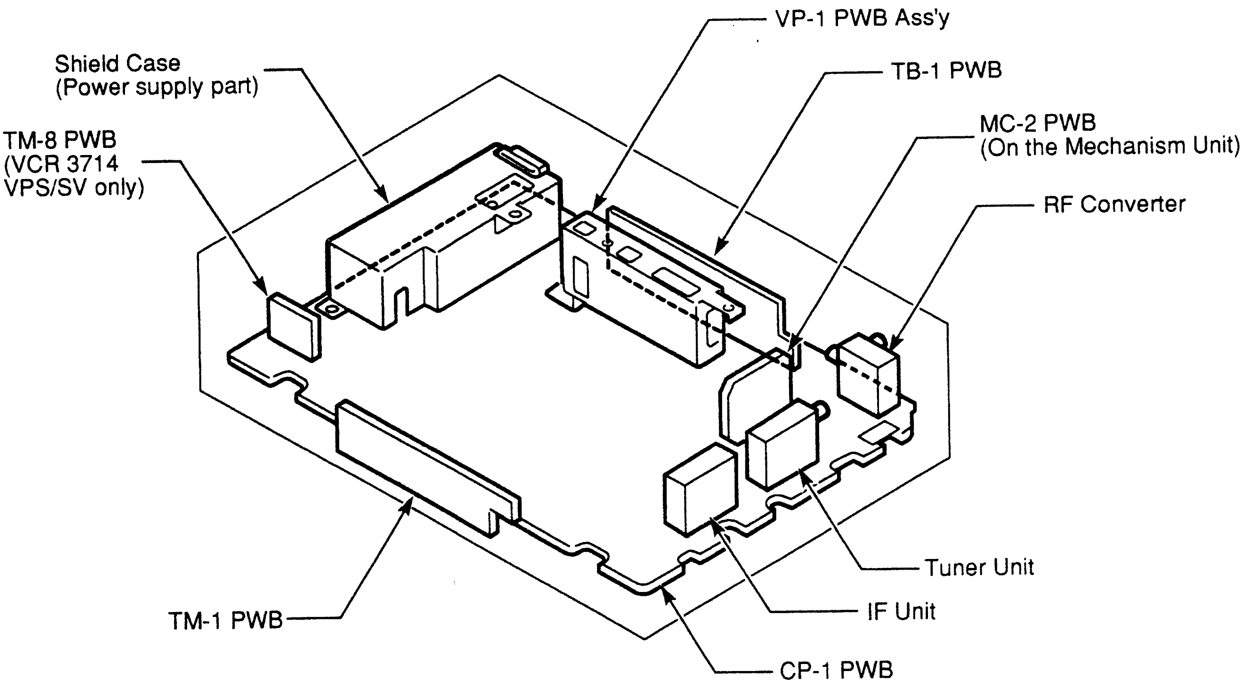

VP-1 PWB Ass'y
Shield Case
(Power supply part)
TB-1 PWB
TM-8 PWB
(VCR 3714
VPS/SV only)
MC-2 PWB
(On the Mechanism Unit)
RF Converter
Tuner Unit
TM-1 PWB
IF Unit
CP-1 PWB

Fig. 1.2.1

2. ELECTRICAL ADJUSTMENT

PREPARATION

This VCR need 4 basic presetting by using the menus displayed on-screen.
After all connection have been made, then follow steps 1 to 4 to preset the VCR.
The 4 presetting steps will be displayed in sequence on TV screen. The setting are entered with the remote control.

Turn on the VCR

1. Adjusting the TV receiver to the video channel: The WELCOME screen will appear. When the video channel has been preset, press the OK button on the remote control.
2. Language selection: Select the desired language, then press the OK button.
3. Clock setting: Using the remote control numeric buttons, enter the date and time, press the OK button.
4. Tuning control adjustments: When the channel position has been preset, press the MENU/TV button.
   When steps 1 to 4 have been finish, ready to operate the all operating mode.

2-1. SERVO CIRCUIT ADJUSTMENT

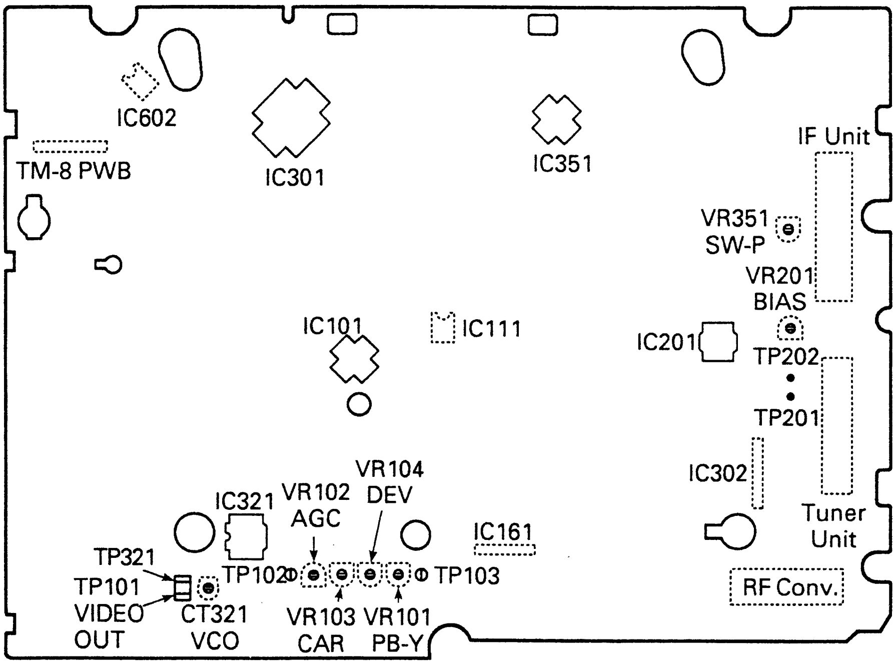
- These adjustments should be carried out upon completion of the tape transport adjustments.
- If the tape transport adjustments (except the tilt adjustment) are carried out after these adjustments, follow the procedures again in Section 2-1-3. SWITCHING POSITION ADJ.
- When a cassette tape is loaded, auto-tracking will be set immediately after starting the first playback. As this will deviate the tracking center set, be sure to press the channel buttons (△) or (▽) once directly after starting playback to prevent auto-tracking from being set.

2-1-1. TEST EQUIPMENT AND STANDARDS REQUIRED

Oscilloscope	Vertical sensitivity: 5 mV/DIV, external trigger Band width: more than 10 MHz
Test Tape	VHJ-0009 or VHJ-0023: SP mode, monoscope, 6 KHz
Blank Tape	VHS-type cassette tape
Monitor TV	

2-1-2. LOCATION OF ADJUSTMENT POINTS

P1B08300F-S1/1


IC602
TM-8 PWB
IC301
IC351
IF Unit
VR351
SW-P
VR201
BIAS
IC101
IC111
IC201
TP202
TP201
IC302
VR104
DEV
IC321
VR102
AGC
IC161
Tuner
Unit
TP321
TP101
VIDEO
OUT
TP102
TP103
RF Conv.
CT321
VCO
VR103
CAR
VR101
PB-Y

CP-1 PWB (FOIL SIDE)

Fig. 2.1.1

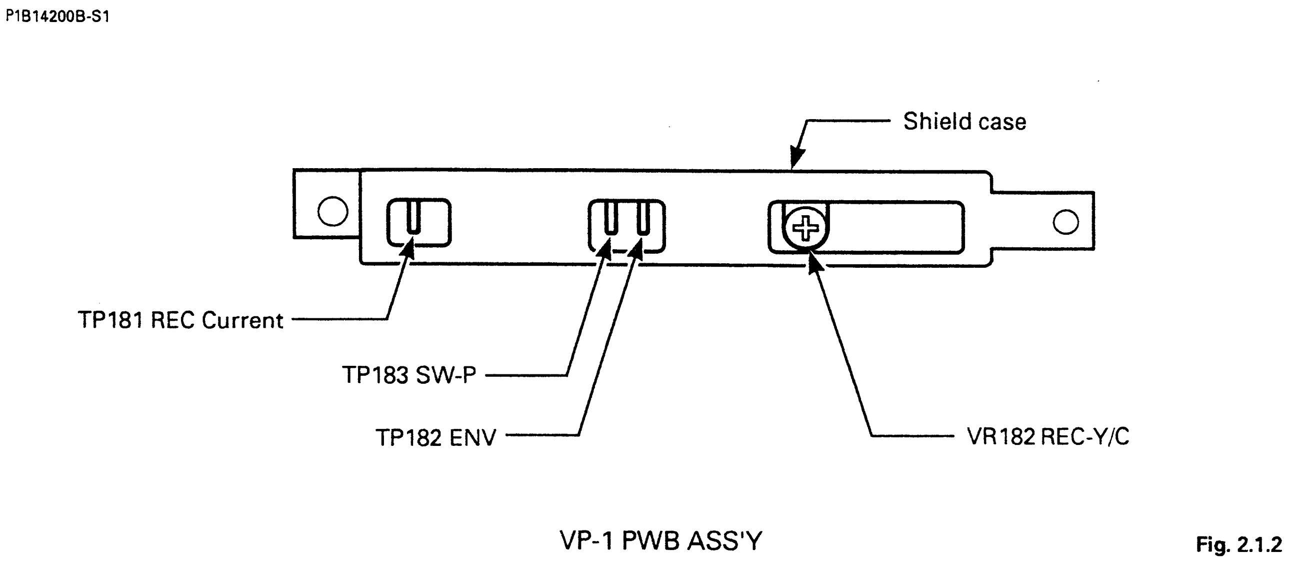

P1B14200B-S1
Shield case
TP181 REC Current
TP183 SW-P
TP182 ENV
VR182 REC-Y/C
VP-1 PWB ASS'Y

Fig. 2.1.2

NOTE:

- Self-recording means "Record any broadcasting or video signal and play back the just-recorded portion".

2-1-3. SWITCHING POSITION ADJ.

Measuring Point	Measuring Equipment	ADJ. Condition
TP101 (VIDEO OUT) TP183 (SW-P)	Oscilloscope	PLAY mode Test tape (VHJ-0009 or VHJ-0023)

ADJ. Location	ADJ. Value
VR351 (SW-P)	6.5 H ± 0.5 H

1. Set the tracking control position to the center by pressing CHANNEL buttons (△) and (▽) simultaneously. (Tracking center position display in the indicator panel "T –:– ")
2. Adjust VR351 (SW-P) so that the width "T" becomes **6.5 H ± 0.5 H** as shown in Fig. 2.1.3.

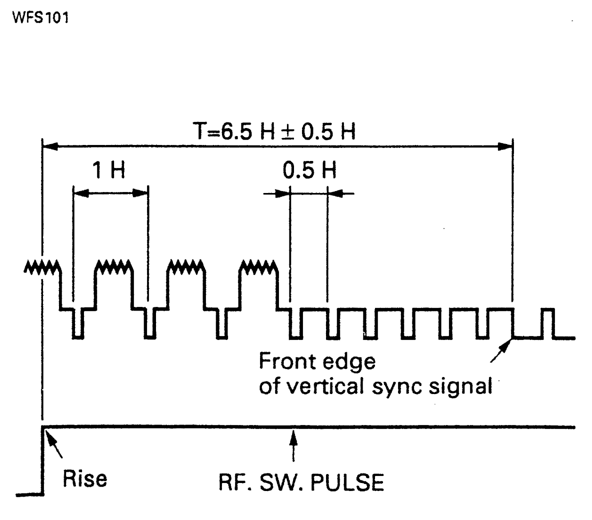

WFS101
T=6.5 H ± 0.5 H
1 H
0.5 H
Front edge
of vertical sync signal
Rise
RF. SW. PULSE

Fig. 2.1.3

2-1-4. STILL V-LOCK ADJ.

Measuring Point	Measuring Equipment	ADJ. Condition
Picture of monitor TV	Color bar generator or Broadcasting Monitor	Self-recording STILL mode Blank tape

ADJ. Location	ADJ. Value
CHANNEL (△) button CHANNEL (▽) button	The minimum vertical shake

1. Play back the just-recorded portion and then set the VCR in the STILL mode.
2. Press the CHANNEL (△) button or the CHANNEL (▽) button so that any vertical shake of the picture is brought to its minimum.

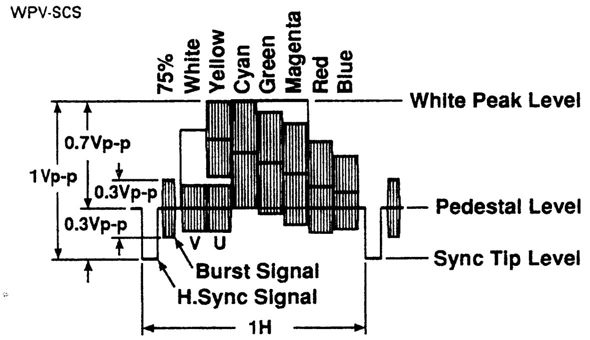
2-2. VIDEO CIRCUIT ADJUSTMENT

- Before making the following adjustments, Section 2-1. SERVO CIRCUIT ADJUSTMENT should be completed.
- Use the relay jig to provide simple adjustment of the VP-1 PWB Ass'y.

2-2-1. TEST EQUIPMENT AND STANDARDS REQUIRED

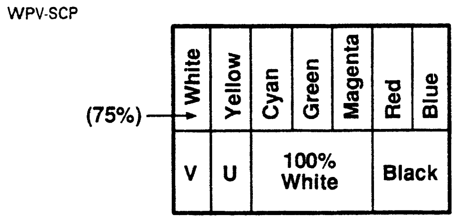
Color Bar Signal Generator	PAL Color bar signel with 100% white level (EBU color bar signel) (Signal waveform is described below. Refer to Fig. 2.2.1)
Oscilloscope	Vertical sensitivity: 5 mV/DIV, external trigger Band width: more than 10 MHz
Digital Voltmeter	DC range
Test Tape	VHJ-0008 or VHJ-0023: SP mode, color bar, 1 kHz (Color bar signal waveform is described below. Refer to Fig. 2.2.3)
Blank Tape	VHS-type cassette tape
Oscilloscope Probe	Input capacity: less than 25 pF (10:1) less than 40 pF (1:1) Covering frequency: DC ~ 40 MHz (10:1) DC ~ 30 MHz (1:1)
Frequency Counter	8 significant digits
Adjustment Relay Jig	VHJ-0065: 5-wire flat cable for VP-1 PWB Ass'y

PAL TV TEST SIGNAL


WPV-SCS
75%
White
Yellow
Cyan
Green
Magenta
Red
Blue
White Peak Level
0.7Vp-p
1Vp-p
0.3Vp-p
0.3Vp-p
Pedestal Level
V U
Burst Signal
H.Sync Signal
Sync Tip Level
1H

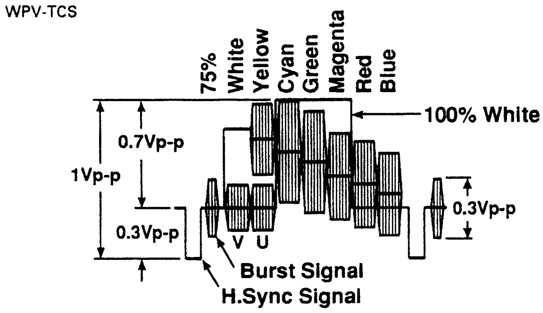
COLOR BAR SIGNAL WAVEFORM

Fig. 2.2.1


WPV-SCP
(75%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
V
U
100% White
Black

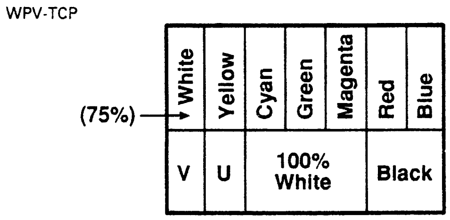
COLOR BAR PATTERN MONITOR TV

Fig. 2.2.2


WPV-TCS
75%
White
Yellow
Cyan
Green
Magenta
Red
Blue
100% White
0.7Vp-p
1Vp-p
0.3Vp-p
0.3Vp-p
V U
Burst Signal
H.Sync Signal

COLOR BAR SIGNAL WAVEFORM (VHJ-0008)

Fig. 2.2.3

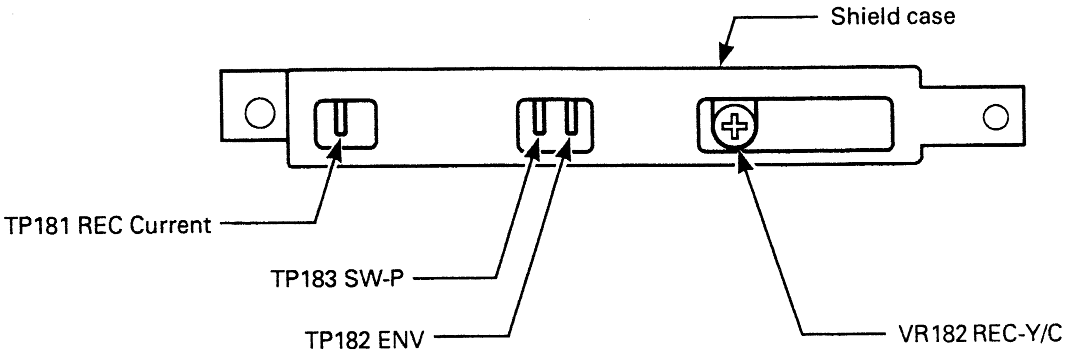

WPV-TCP
(75%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
V
U
100% White
Black

COLOR BAR PATTERN (VHJ-0008) ON MONITOR TV

Fig. 2.2.4

2-2-2. LOCATION OF ADJUSTMENT POINTS

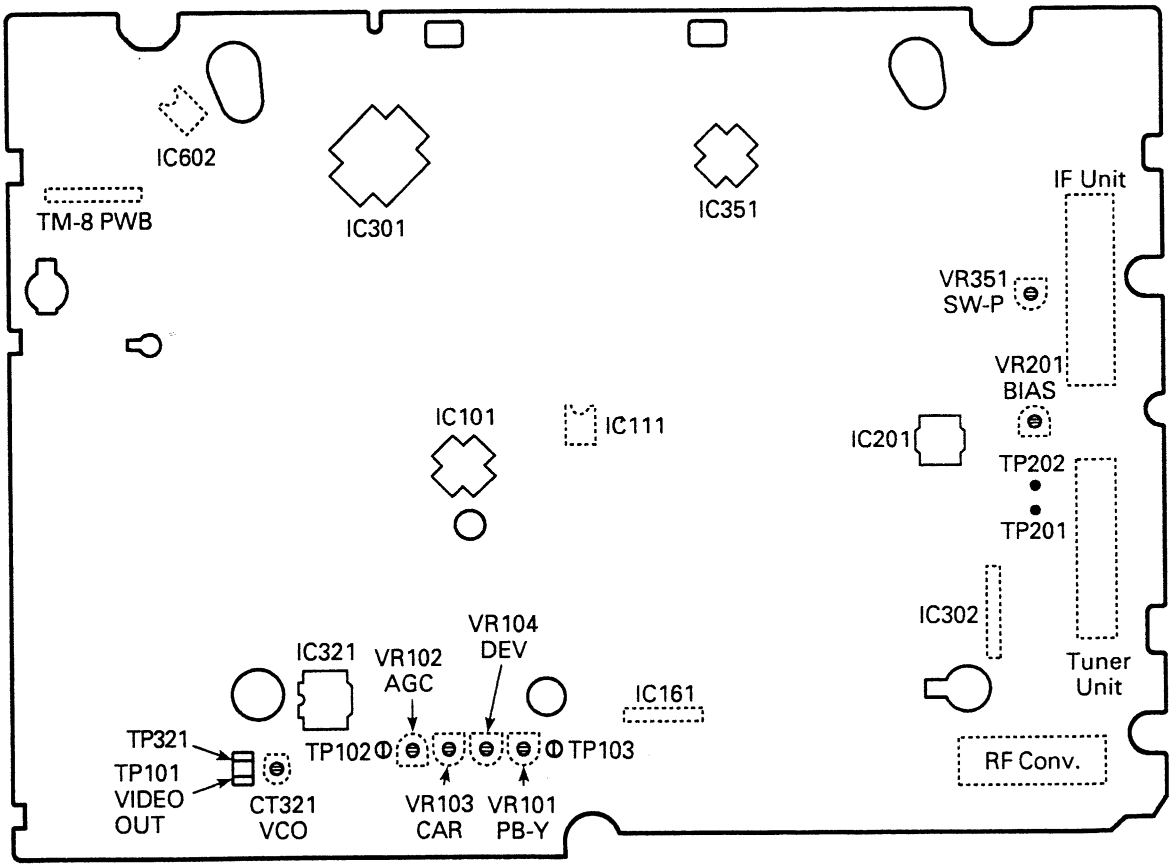
P1B14200B-V1


Shield case
TP181 REC Current
TP183 SW-P
TP182 ENV
VR182 REC-Y/C

VP-1 PWB ASS'Y

Fig. 2.2.5

P1B08300F-V1/1


IC602
TM-8 PWB
IC301
IC351
IF Unit
VR351
SW-P
VR201
BIAS
IC101
IC111
IC201
TP202
TP201
IC302
Tuner Unit
VR104
DEV
IC321
VR102
AGC
IC161
RF Conv.
TP321
TP101
VIDEO
OUT
TP102
TP103
CT321
VCO
VR103
CAR
VR101
PB-Y

CP-1 PWB (FOIL SIDE)

Fig. 2.2.6

2-2-3. ADJUSTMENT RELAY JIG

Connect the Flat cable end from the Cylinder Ass'y to the VP-1 PWB Ass'y using the Relay jig to provide simple repairing and adjustment of the VP-1 PWB Ass'y, as shown in Fig. 2.2.7. Further, when adjusting the VP-1 PWB Ass'y, be sure to make contact an end of Shield case with Bracket of the VP-1 PWB Ass'y to maintain the shield effect. If the VP-1 PWB Ass'y does not contact, there is insufficient ground and no proper play back image can be obtained.

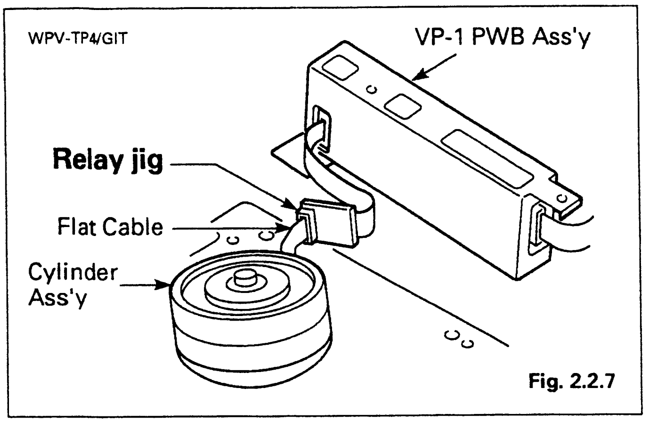


Fig. 2.2.7

NOTES:

- Self-recording means "Record the video signal and play back the just-recorded portion".
- Connect the monitor TV to the VIDEO OUTPUT terminal (EURO-AV1 terminal pin 19), before making following adjustments.
- ASO HIGH button to the OFF position.

2-2-4. AGC LEVEL ADJ.

Measuring Point	Measuring Equipment	ADJ. Condition
TP102	Color bar generator Oscilloscope (10:1 probe)	E-E mode

ADJ. Location	ADJ. Value
VR102 (AGC)	0.42 Vp-p ± 0.025 Vp-p

1. Connect the color bar generator to the VIDEO INPUT terminal (EURO-AV1 pin20).
2. Adjust VR102 (AGC) for **0.42 Vp-p ± 0.025 Vp-p** as shown in Fig. 2.2.8.

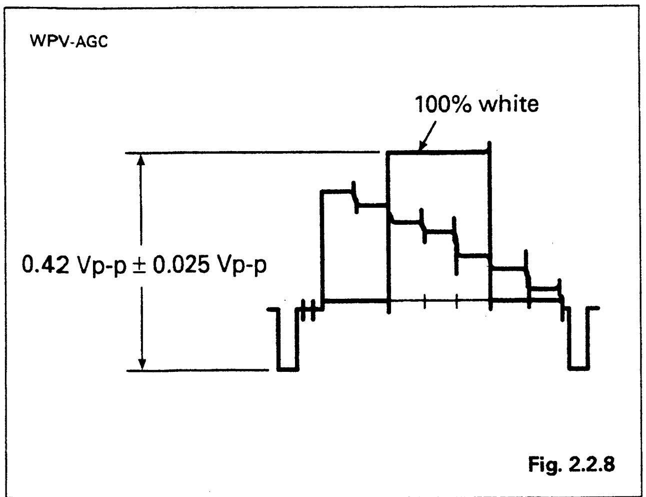


Fig. 2.2.8

2-2-5. PB-Y LEVEL ADJ.

Measuring Point	Measuring Equipment	ADJ. Condition
TP101	Oscilloscope	PLAY mode Test tape (VHJ-0008 or VHJ-0023)

ADJ. Location	ADJ. Value
VR101 (PB-Y)	1 Vp-p ± 0.05 Vp-p

1. Play back a test tape.
2. Adjust VR101 (PB-Y) for the video luminance signal level of **1 Vp-p ± 0.05 Vp-p**. (Refer to Fig. 2.2.9)

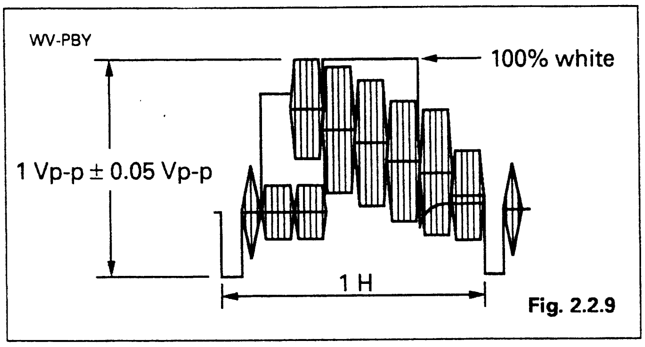


Fig. 2.2.9

2-2-6. CARRIER SET ADJ.

Measuring Point	Measuring Equipment	ADJ. Condition
TP103	Color bar generator Frequency counter	REC mode

ADJ. Location	ADJ. Value
VR103 (CAR)	3.83 MHz ± 0.05 MHz

1. Connect the color bar generator to the VIDEO INPUT terminal (EURO-AV1 pin 20).
2. After removing the first color bar signal input from the video input terminal, immediately adjust VR103 (CAR) so that the frequency becomes **3.83 MHz ± 0.05 MHz.**

2-2-7. VCO (on screen assist) ADJ.

Measuring Point	Measuring Equipment	ADJ. Condition
TP321	Color bar generator Digital voltmeter	E-E mode

ADJ. Location	ADJ. Value
CT321 (VCO)	2.5 Vp-p ± 0.3 Vp-p

1. Connect the digital voltmeter (DC range) to TP321 and GND.
2. Adjust CT321 (VCO) so that the voltage is **2.5 V ± 0.3 V.**

2-2-8. DEVIATION ADJ.

Measuring Point	Measuring Equipment	ADJ. Condition
TP101	Color bar generator Oscilloscope	Self-recording mode Blank tape

ADJ. Location	ADJ. Value
VR104 (DEV)	1 Vp-p ± 0.05 Vp-p

1. Record the color bar signal on the blank tape.
2. Play back of the just-recorded portion.
3. Adjust VR104 (DEV) for **1 Vp-p ± 0.05 Vp-p** as shown in Fig. 2.2.10.
4. If the adjustment value is not satisfactory, adjust VR104 (DEV) and repeat steps 2 to 3.

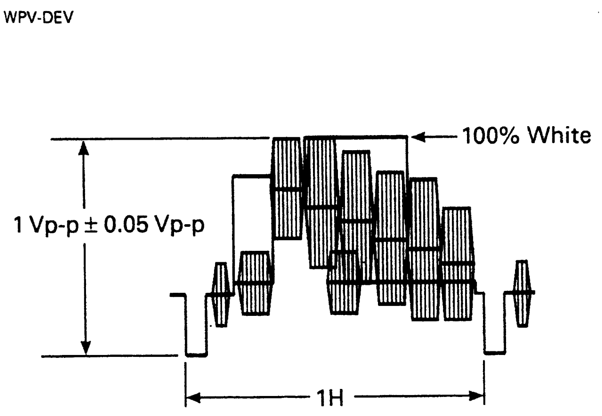


Fig. 2.2.10

2-2-9. Y/C REC CURRENT ADJ.

Measuring Point	Measuring Equipment	ADJ. Condition
TP181 (on VP-1 PWB)	Color bar generator Oscilloscope (1:1 probe)	REC mode Blank tape

ADJ. Location	ADJ. Value
VR182 (REC-Y/C)	600 mVp-p ± 25 mVp-p

1. Connect the ground of the oscilloscope to the shield case of the VP-1 PWB Ass'y.
2. Adjust VR182 (REC-Y/C) so that the video luminance signal level at the sync tip is **600 mVp-p ± 25 mVp-p**. (Refer to Fig. 2.2.11)

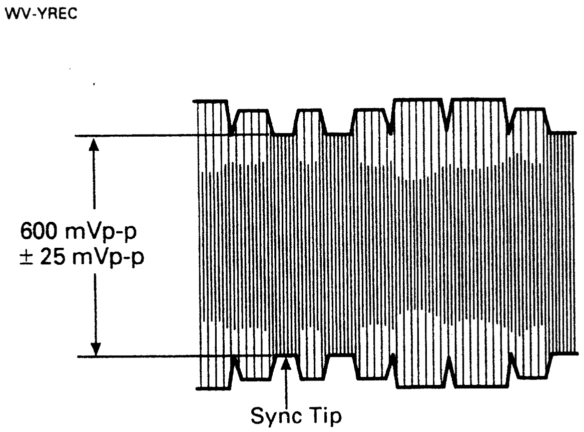


Fig. 2.2.11

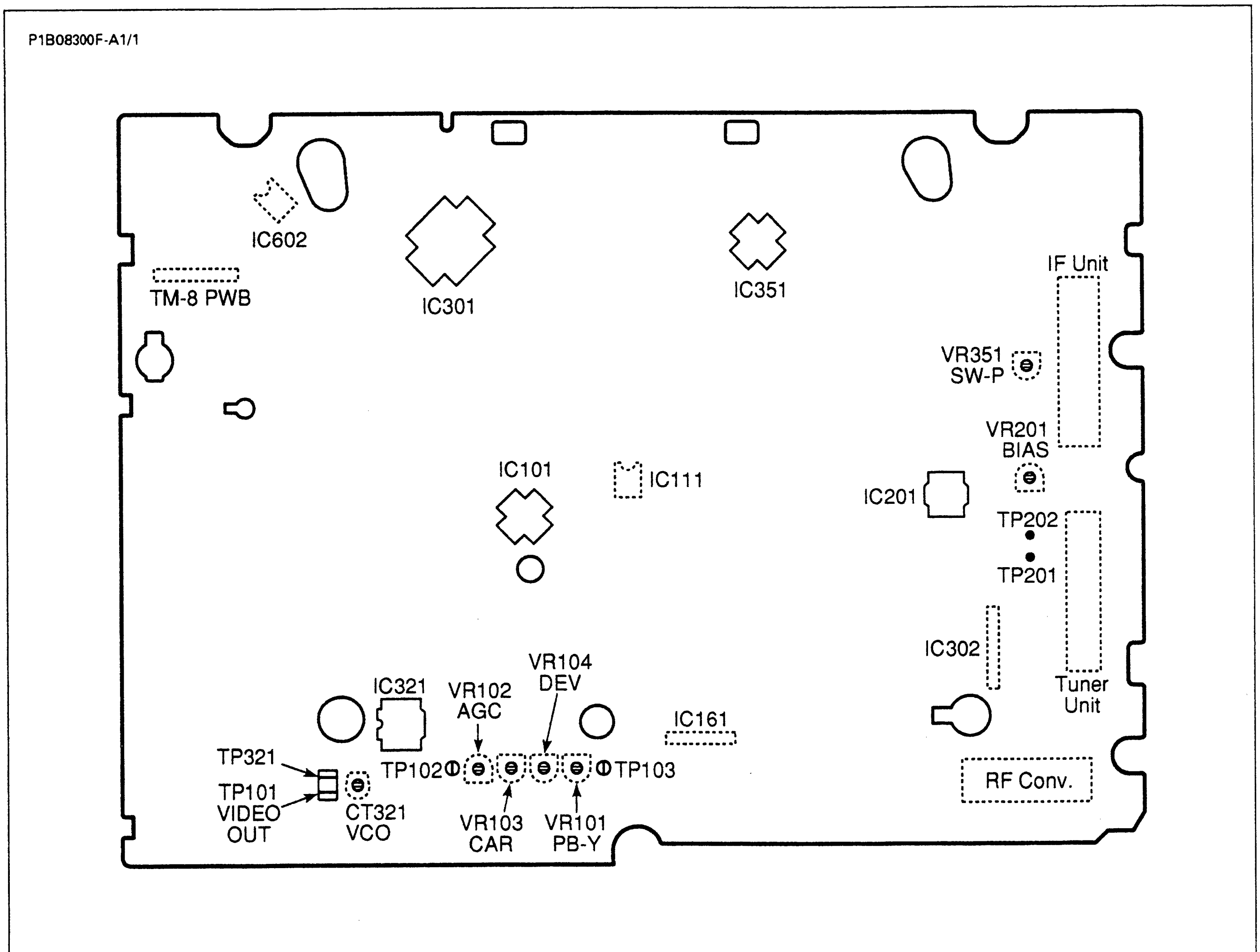
2-3. AUDIO CIRCUIT ADJUSTMENT

- Before making these adjustments, (especially, the tape guide height and audio control erase head height adjustments) should be carried out, so that the tape traveling between the loading guide pole and the audio control erase head runs without fluttering, twisting, curling.
- Before making these adjustments, Section 2-1. SERVO and Section 2-2. VIDEO circuit adjustments should be carried out.

2-3-1. TEST EQUIPMENT AND STANDARDS REQUIRED

Standard Audio Signal Generator (SG)	Output frequency : 10 Hz ~ 20 kHz Output level : more than 1 Vrms Output impedance : 600 Ω Distortion ratio : less than 0.1% Output in use SG : Frequency: .... 400 Hz, 10 kHz (switchable) Output level: .... −33.8 dBs ± 0.5 dB
Color Bar Signal Generator	Color bar signel with 100% white level. (Signal waveform is described before. Refer to Fig. 2.2.1)
Oscilloscope	Vertical sensitivity : 10 mV/DIV Band width : more than 30 MHz
AC Voltmeter	Effective value indication Input frequency : 10 Hz ~ 20 kHz Input Impedance : more than 1 MΩ Measurement level : 1mV (full scale)
Blank Tape	VHS-type cassette tape

2-3-2. LOCATION OF ADJUSTMENT POINTS


P1B08300F-A1/1
IC602
TM-8 PWB
IC301
IC351
IF Unit
VR351
SW-P
VR201
BIAS
IC101
IC111
IC201
TP202
TP201
IC302
Tuner Unit
VR104
DEV
IC321
VR102
AGC
IC161
TP321
TP101
VIDEO OUT
CT321
VCO
TP102
TP103
VR103
CAR
VR101
PB-Y
RF Conv.

CP-1 PWB (FOIL SIDE)

Fig. 2.3.1

NOTE:

- Self-recording means "Record the audio signal and play back the just-recorded portion".

2-3-3. BIAS LEVEL ADJ.

[A]

Measuring Point	Measuring Equipment	ADJ. Condition
TP201 (HOT) TP202 (GND)	Oscilloscope AC voltmeter	REC mode Blank tape

ADJ. Location	ADJ. Value
VR201 (BIAS)	23 mVrms

1. Load the VCR with a blank tape and select the record mode without all incoming signal.
2. After confirming on the oscilloscope that a 70 kHz sine wave is being output, adjust VR201 (BIAS) so that the AC voltmeter's reading is **23 mVrms.**

[B]

Measuring Point	Measuring Equipment	ADJ. Condition
AUDIO OUTPUT terminal (EURO-AV pin 3: Lch)	Oscilloscope AC voltmeter Standard audio signal generator (SG: signal –33.8 dBs, 400 Hz –33.8 dBs, 10 kHz)	Self-recording Blank tape

ADJ. Location	ADJ. Value
VR201 (BIAS)	–4 dB ~ +4 dB between 400 Hz and 10 kHz

1. Connect the standard audio signal generator to the AUDIO INPUT terminal (EURO-AV pin6: Lch).
2. Set the standard audio signal generator's output level to –33.8 dBs.
3. Set the standard audio signal generator's frequency to 400 Hz and then 10 kHz. Record each of these frequency signals.
4. Play back each of the just-recorded portion.
5. Confirm that the 10 kHz level on AC voltmeter's reading is **from –4 dB to +4 dB**, compared with 400 Hz level.
6. If the 10 kHz level is less than –4 dB below 400 Hz level or more than +4 dB above 400 Hz level, Rotate VR201 (BIAS) slightly to adjust it.
7. Repeat steps 3 through 6 if necessary.

2-4. TUNER AND IF CIRCUITS ADJUSTMENT

- When any malfunction occurs in the TUNER circuit the whole unit must be replaced.
- An adjustment of the IF circuit is shown as follows.

NOTE: The TUNER unit does not need any adjustments, because precise adjustments have been down before shipment.

2-4-1. TEST EQUIPMENT AND STANDARDS REQUIRED

Monitor TV	

2-4-2. LOCATION OF ADJUSTMENT POINT

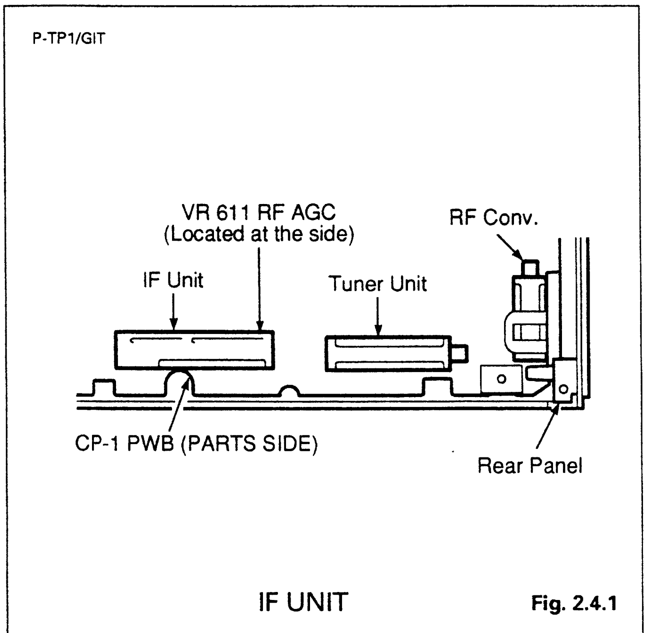

P-TP1/GIT
VR 611 RF AGC
(Located at the side)
RF Conv.
IF Unit
Tuner Unit
CP-1 PWB (PARTS SIDE)
Rear Panel
IF UNIT

Fig. 2.4.1

2-4-3. RF AGC ADJ.

Measuring Point	Measuring Equipment	ADJ. Condition
Picture of monitor TV	Monitor TV	E-E mode

ADJ. Location	ADJ. Value
VR611 (RF AGC)	S/N is best point

1. Connect the monitor TV to VHF/UHF ANTENNA OUTPUT terminal.
2. Connect the VHF antenna to VHF/UHF ANTENNA INPUT terminal.
3. Receive the middle electrical field (70 dBμ ~ 90 dBμ) of the VHF high channel, and slowly turn VR611 (RF AGC) from the point where snow-noise is present to the point where it just disappears from the monitor TV.
4. Confirm by monitor TV that there is no beat and saturation (S/N is best point) when receiving any TV channel.

3. TEST POINT FOR TAPE PATH ADJUSTMENT

Test point TP182 (ENV) and TP183 (SW-P) for tape path adjustment is shown in Figure below.
For adjustment, refer to the separate volume "Mechanical adjustments 6611 77 06 and 6611 74 46."

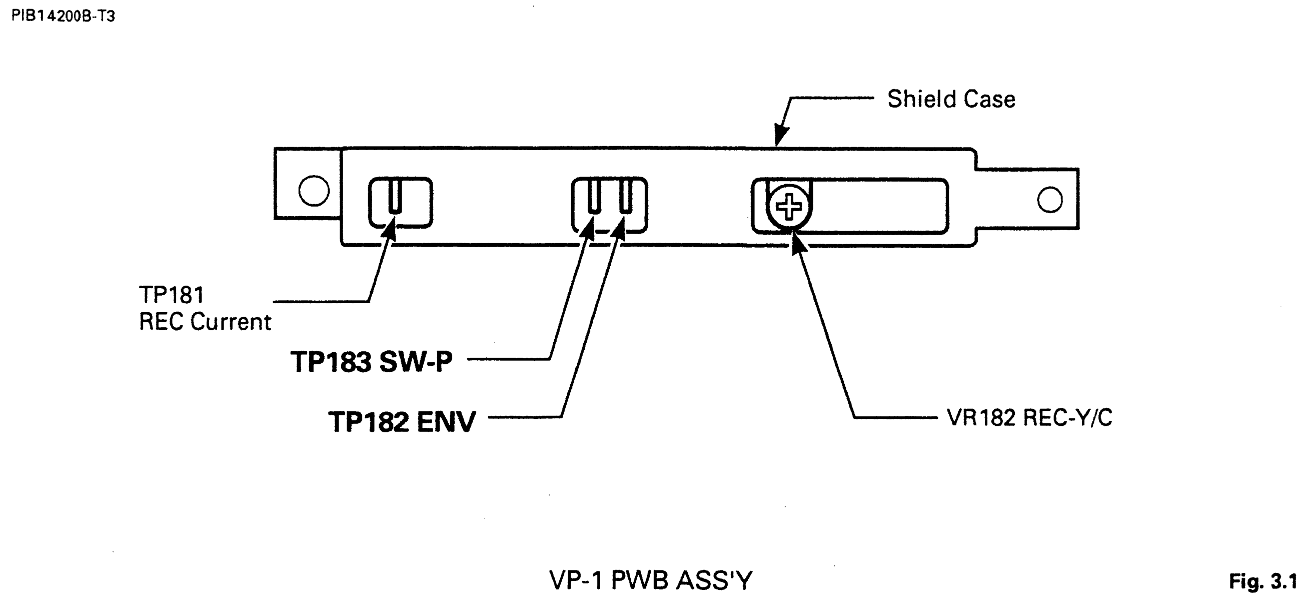

PIB14200B-T3
Shield Case
TP181
REC Current
TP183 SW-P
TP182 ENV
VR182 REC-Y/C
VP-1 PWB ASS'Y

Fig. 3.1

NOTE

4. PARTS LIST

ACCESSORIES

LOCATION	PARTS NO.	DESCRIPTION
	5652 2315	REMOCON,RC314(WITH COVER BATTERY)
	6134 5345	COVER BATTERY(FOR REMOCON)
	6612 5929	INSTRUCTION MANUAL (VCR 3714VPS/S ONLY)
OR	6612 5952	INSTRUCTION MANUAL(VCR 3714SV ONLY)
	4131 4198	CABLE,ANT(VCR 3714VPS/S ONLY)
OR		CABLE,ANT(VCR 3714VPS/S ONLY)
OR	4131 4309	CABLE,ANT PAL (VCR 3714VPS/S ONLY)
OR		CABLE,ANT PAL (VCR 3714VPS/S ONLY)
OR	4131 4221	CABLE,ANT(VCR 3714SV ONLY)
OR	4131 4286	CABLE,ANT(VCR 3714SV ONLY)
OR	4131 4203	CORD(VCR 3714SV ONLY)
OR		CORD(VCR 3714SV ONLY)
	⚠ 4131 8829	CORD,POWER
OR	⚠	CORD,POWER
OR	⚠	CORD,POWER
OR	⚠	CORD,POWER

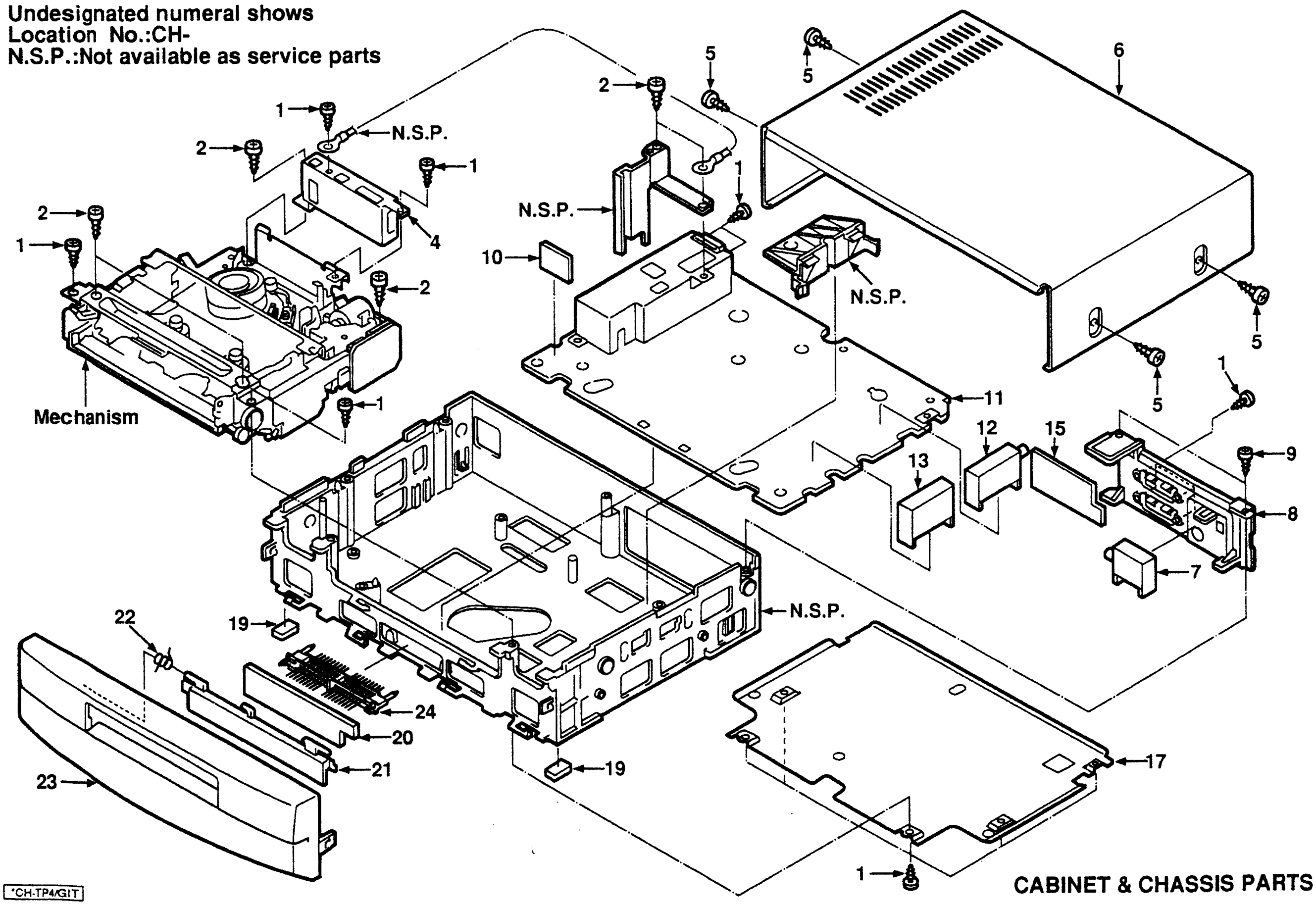
PACKING MATERIALS

LOCATION	PARTS NO.	DESCRIPTION
	6162 8887	CARTON CASE(VCR 3714VPS/S ONLY)
OR	6162 8895	CARTON CASE(VCR 3714SV ONLY)
	6172 3091	CUSHION,FRONT
	6172 3092	CUSHION,BACK
		POLYE COVER,INNER-K

CABINET & CHASSIS PARTS

LOCATION	PARTS NO.	DESCRIPTION
CH-1		SCR L-TPG BIN 3X10
CH-2		SCR S-TPG BIN 4X12
CH-4	6913 6666	COMPL PWB,VP-1
CH-5		SPECIAL SCREW
CH-6	6135 5175	COVER TOP
CH-7	5826 0551	MODULATOR,RF
OR	5826 0554	MODULATOR,RF
CH-8	8681 5268	TERMINAL
CH-9		SCR S-TPG BIN 3X10
CH-10	6913 0957	COMPL PCB,TM-8(VCR 3714VPS/S ONLY)
CH-11	6913 6695	COMPL PWB,CP-1-A (VCR 3714VPS/S ONLY)
OR	6913 4554	COMPL PWB,CP-1-A(VCR 3714SV ONLY)
CH-12	5823 0775	TUNER PACK
CH-13	5825 0425	IF PACK
CH-15	6913 6652	COMPL PWB,TB-1
CH-17	6135 5174	COVER BOTTOM
CH-19	6273 4052	STAND,FELT,FRONT
CH-20	6913 6638	COMPL PWB,TM-1
CH-21	6134 5346	DOOR CASSETTE
CH-22	7358 4829	SPRING
CH-23	6418 3432	ASSY,CABINET FRONT
CH-24	4131 4291	PLUG,26P

Undesignated numeral shows
Location No.:CH-
N.S.P.:Not available as service parts

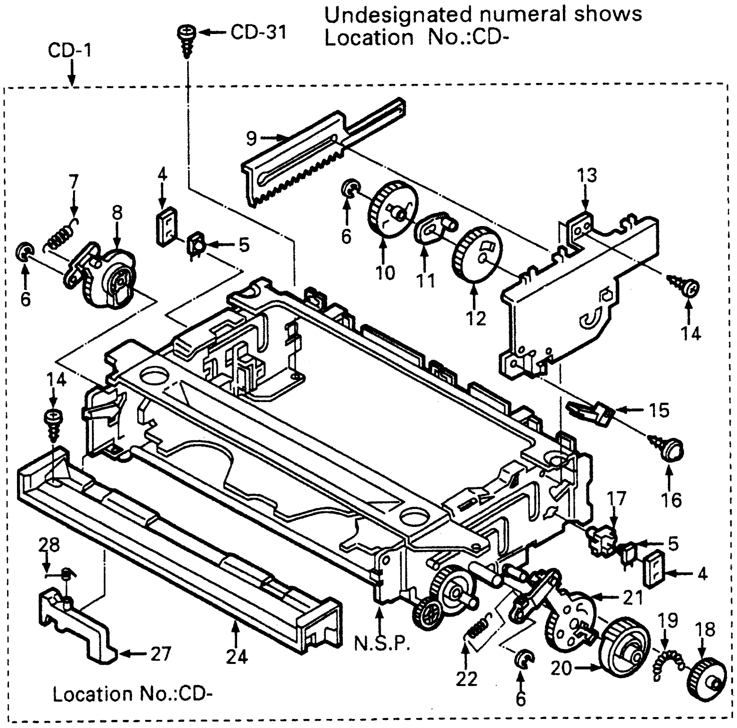


CABINET & CHASSIS PARTS

MECHANISM PARTS 1

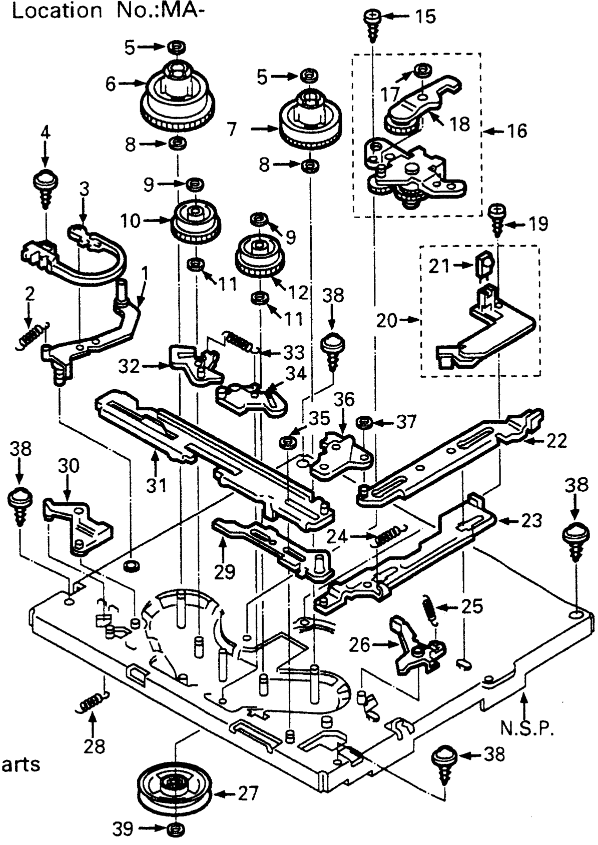
LOCATION	PARTS NO.	DESCRIPTION
CD-1	8318 6017	COMPL,CASSETTE MECHA
CD-4	8681 4250	LID
CD-5	3656 3089	PHOTO COUPLE PN150SAN
CD-6		RING E 2.3
CD-7	7358 4341	SPRING,LINK L
CD-8	7525 1181	ASSY,GEAR,LEVER L
CD-9	8318 5316	RACK
CD-10	7525 1399	GEAR,LOCK
CD-11	8681 5276	ASSY,LEVER,PINION
CD-12	7525 1183	GEAR,PINION
CD-13	8681 4097	ASSY,BRACKET,GEAR
CD-14		SCR S-TPG BIN 2.6X4
CD-15	4112 7484	SW,SPECIAL
CD-16		SCR PAN+SW+W 2X9
CD-17	8681 4816	HOLDER,TRANSISTOR
CD-18	7525 1184	GEAR,IDLER
CD-19	7358 4363	SPRING,GEAR MAIN
CD-20	7525 1185	GEAR,MAIN
CD-21	7525 1186	ASSY,GEAR,LEVER R
CD-22	7358 4342	SPRING,LINK R
CD-24		BOARD,UNDER
CD-27	8318 5860	LEVER,SAFETY SW
CD-28	7358 4713	SPRING,SAFETY SW
CD-31		SCR BIN 3X6
MA-1	8681 4388	ASSY,LEVER,TENSION
MA-1	8681 4388	ASSY,LEVER,TENSION
MA-2	7358 4390	SPRING,LEVER TENSION
MA-3	8681 4120	ASSY,HOLDER,BAND
MA-4		SCR PAN+SW+W 2.6X6
MA-5		WASHER Y 2.6X6X0.25
MA-6	6253 4244	ASSY,REEL,SUPPLY
OR	6253 4246	ASSY,REEL,SUPPLY
MA-7	6253 4245	ASSY,REEL,TAKE UP
OR	6253 4255	ASSY,REEL,TAKE UP
MA-8	7726 0615	SPECIAL WASHER 3.1X6X0.3
OR	7726 0594	SPECIAL WASHER 3.1X6X0.4
OR	7726 0585	SPECIAL WASHER 3.1X6X0.5
MA-9	6158 2019	WASHER Y 2.1X5X0.25
OR		WASHER Y 2.1X6X0.25
MA-10	7525 1348	GEAR,REEL SUPPLY
OR	7525 1398	GEAR,REEL SUPPLY
MA-11	7726 0618	SPECIAL WASHER 2.6X6X0.25
MA-12	7525 1349	GEAR,REEL TAKE UP
OR	7525 1397	GEAR,REEL TAKE UP
MA-15		SPECIAL SCREW 2.6X4
MA-16	7548 4261	COMPL,IDLER,CLUTCH
MA-17		WASHER Y 2.1X4X0.25
MA-18	7548 4260	ASSY,IDLER
MA-19		SCR S-TPG BIN 2.6X8
MA-20	6913 1130	COMPL PCB,MC-4
MA-21	3681 1690	LED LN59
MA-22	8681 4121	ASSY,SLIDE,ACT PLATE
MA-23	8681 5262	SLIDE,C BRAKE
MA-24	7358 4345	SPRING,RETURN SLIDE
MA-25	7358 4346	SPRING,SUB T
MA-26	8681 4382	ASSY,BRAKE SUB T
MA-27	7548 4226	PULLEY,REEL
MA-28	7358 4347	SPRING,SUB SUPPLY
MA-29	8681 4105	SLIDE,ACT BRAKE
MA-30	8681 4163	BRAKE,SUB SUPPLY
MA-31	8681 4107	ASSY,SLIDE,M PLATE
MA-32	8681 4108	ASSY,BRAKE,SUPPLY
MA-33	7358 4488	SPRING,MAIN BRAKE
MA-34	8681 4109	ASSY,BRAKE,TAKE UP
MA-35		WASHER Y 2.6X5X0.5
MA-36	8681 4110	LEVER,CONT PLATE
MA-37	7726 0611	SPECIAL WASHER
MA-38		SCR S-TPG BIN 4X12
MA-39		SPECIAL WASHER 2.4X6X0.25

Undesignated numeral shows Location No.:CD-



Location No.:CD-

Undesignated numeral shows Location No.:MA-



N.S.P.:Not available as service parts

DB801000
MB0013ZZ

MECHANISM PARTS 2

LOCATION	PARTS NO.	DESCRIPTION
DR-1	4335 9374	COMPL,CYLINDER,2N2P-V
OR		COMPL,CYLINDER,2N2P-V
DR-2		SCR PAN+W 3X8
DR-3	4335 9343	ASSY,CYLINDER,UPR 2N2P-V
DR-4	4335 9463	ASSY,CYLINDER,LWR 2AL
OR	4335 9308	ASSY,CYLINDER,LWR2
DR-5	8318 5783	SPACER,MOTOR 0.3T
DR-6	8681 4885	BASE,CYLINDER
DR-7		SCR PAN+FLG 3X6
DR-8		SCR PAN+FLG 2.6X8
DR-9	4335 9337	STATOR,MOTOR CYL
OR		STATOR,MOTOR CYL
DR-10		SCR PAN+SW 2.3X10
OR		SCR PAN+SW 2.3X8
DR-11	4335 9317	ROTOR,MOTOR CYL
DR-12		SCR PAN+SW 2.3X6
MB-1	8318 5862	SLEEVE
MB-2	7726 0622	SPECIAL WASHER
MB-3	8318 5863	TAPE GUIDE
MB-4		NUT HEX (3)
MB-5	8681 4881	CAP
MB-6	8681 4112	ASSY,SLIDE,ACT PINCH
MB-7	8681 4113	ASSY,LEVER,CAM PINCH
MB-8	6158 2016	WASHER Y 3.1X8X0.5
MB-9	7358 4350	SPRING,ACE HEAD
MB-10	8681 5249	COMPL,BRACKET,HEAD
MB-11	7726 0653	SLEEVE,ACE HEAD
MB-12	7711 0176	SPECIAL NUT (M5)
MB-13		SCR PAN+SW+W 2.6X5
MB-14	8681 4817	BRACKET,STOPPER
MB-15	7358 4352	SPRING,SLIDE BRAKE
MB-16	8681 4927	COMPL,SLIDE,CAM
MB-17	7358 4351	SPRING,LINK LOCK
MB-18	7522 0219	DAMPER
MB-19	7525 1193	GEAR,FRONT LOAD
MB-20	8681 4384	ASSY,LEVER,FRONT
MB-21	7525 1347	GEAR,HELICAL FRONT
MB-22		SCR PAN+SW+W 2.6X6
MB-23		SCR S-TPG PAN 2.6X6
MB-24		SCR S-TPG BIN 2.6X8
OR		SCR S-TPG PAN 2.6X8
MB-28	8681 4127	HOLDER,WORM
MB-29		WASHER
MB-30	7525 1195	ASSY,WORM,FRONT
MB-31	8318 5722	BRACKET,HOLDER
MB-32	8318 5532	PLATE,NUT
MB-33	8868 0723	DAMPER,MOTOR
MB-34	8681 4123	DAMPER,WORM
MB-35	4432 8818	ASSY,LOADING MOTOR
MB-36	8868 0724	DAMPER,MOTOR
MB-37	6913 1082	COMPL PCB,MC-3
MB-38	6913 6691	COMPL PWB,MC-2
MB-39	4112 9866	ROTARY SWITCH
MB-40		SCR PAN 2.6X13
MB-41	8681 4385	ASSY,SLIDE,FRONT
MB-42	7358 4457	SPRING,LEVER LOAD
MB-43	7358 4458	SPRING,LEVER ACT
MB-44	8681 4386	HOLDER,WORM
OR	8681 4977	HOLDER,WORM
MB-45		WASHER 2.1X6X0.5
MB-46	7525 1264	ASSY,WORM,LOAD
MB-47	7618 4267	BELT,LOADING
MB-48		WASHER SLIT 2.6X5X0.50
MB-49	7525 1191	GEAR,HELICAL
MB-50	8681 4628	ASSY,LEVER,REV GUIDE
MB-51	7358 4356	SPRING,REVIEW LEVER
MB-52	7538 3373	COMPL,PINCH ROLLER
MB-53	7358 4830	SPRING,PINCH ROLLER
MB-54	6158 2015	WASHER Y 3.6X6X0.5
MB-55	8681 4128	COMPL,LEVER,ACT BRAKE

Note:
As shown in the figure, the parts supporting the "ASSY, GUIDE, ROLLER" of Location No. MB-61 comes in two types-group A and group B. (Location MB-60 and 61 are the same.) No one part of group A can be replaced by that of group B by itself, but group A and group B can be replaced as a whole as they are interchangeable. NOTE-M1

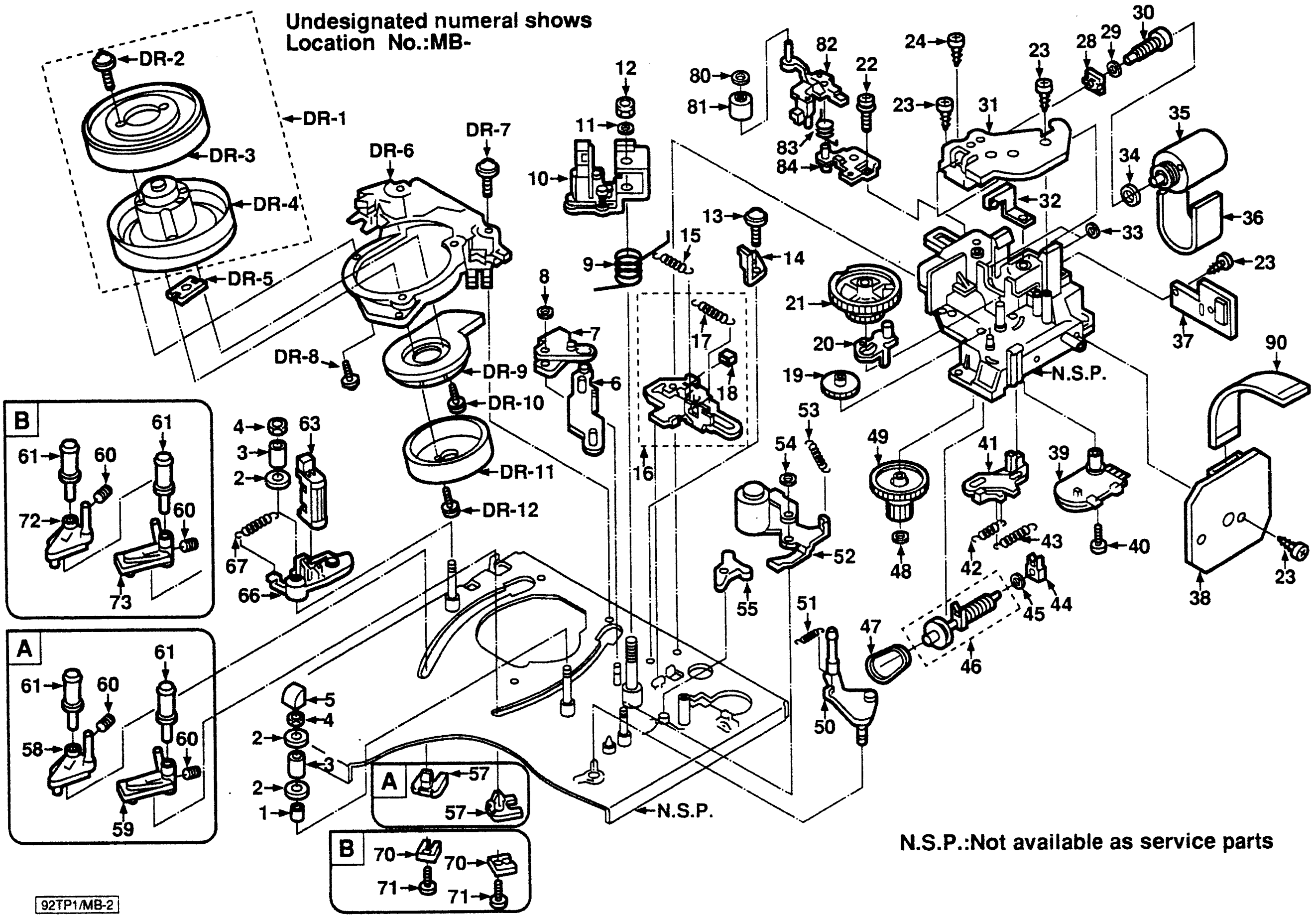
LOCATION	PARTS NO.	DESCRIPTION
MB-57	8318 6040	PLATE,BGR
MB-58	8681 5264	ASSY,MOUNTING,ROLLER S
MB-59	8681 5265	ASSY,MOUNTING,ROLLER T
MB-60	6158 2020	SCR SET HEX-SCT 2X3
MB-61	8681 4132	ASSY,GUIDE,ROLLER
MB-63	4335 9466	HEAD,ERASE FULL
MB-66	8318 6072	LEVER,FE HEAD
MB-67	7358 4357	SPRING,ERASE HEAD
MB-70	8318 5338	PLATE,GUIDE
MB-71	6158 2022	SCR BIN 2.6X5
MB-72	8681 4130	ASSY,BASE,ROLLER S
MB-73	8681 4131	ASSY,BASE,ROLLER T
MB-80	6158 2018	WASHER Y 2.6X6X0.5
MB-81	7538 3425	ASSY,ROLLER,CLEANER
MB-82	8318 6013	ASSY,LEVER,CLEANER
MB-83	7358 4714	SPRING
MB-84	8681 5245	BRACKET,CLEANER
MB-90	4131 4293	FLEXIBLE FLAT CABLE SCN811-CN302

MECHANISM PARTS 3

LOCATION	PARTS NO.	DESCRIPTION
MC-1	4432 9389	MOTOR,CAPSTAN DC 3W
MC-2	7618 4268	BELT,REEL DRIVE
MC-3	8681 4971	COMPL,LEVER,CLUTCH
MC-6	7358 4359	SPRING,LEVER CLUTCH
MC-7	8681 4136	LEVER,CHANGE CLUTCH
MC-8	7358 4360	SPRING,CHANGE CLUTCH
MC-9	8681 4167	ASSY,BRAKE,CAPSTAN
MC-10	7358 4453	SPRING,CAPSTAN
MC-12		SCR S-TPG BIN 2.6X8
MC-13	6158 2016	WASHER Y 3.1X8X0.5
MC-14	8681 5263	SLIDE,CAM PLATE
MC-15	7525 1196	CAM,MODE
MC-16	6158 2017	WASHER Y 3.1X6X0.5
MC-17	7525 1350	CAM,MAIN
MC-18	8681 4976	ASSY,RACK,LOAD
MC-19	6158 2018	WASHER Y 2.6X6X0.5
MC-20	7726 0654	SPACER,RACK LOAD
MC-22		SCR PAN+FLG 3X4
MC-23	7358 4365	ASSY,EARTH,CYL
MC-24	7525 1351	GEAR,LOAD TAKE UP
MC-25	7358 4361	SPRING,GEAR LOAD T
MC-26	8681 4141	ASSY,LEVER,LOAD T
MC-27	7525 1199	GEAR,LOAD S
MC-28	7358 4362	SPRING,GEAR LOAD S
MC-29	8681 4142	ASSY,LEVER,LOAD S
MC-30	8681 4143	LEVER,RETURN TENSION
MC-31	8681 4387	ASSY,LEVER CONTROL
MC-34		SCR S-TPG PAN 2.6X6
MC-35	7726 0621	SPECIAL WASHER 3.1X6X0.25
MC-36	7525 1396	ASSY,GEAR,FRICTION
MC-37		SPECIAL WASHER 2.4X6X0.25
MC-38		WASHER Z 2.6X10X0.5
MC-40		SCR S-TPG BIN 2.6X5
MC-41	6913 1133	COMPL,MC-1

EXPLODED VIEW OF MECHANISM PARTS 2

Undesignated numeral shows
Location No.:MB-


DR-2
DR-1
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DR-9
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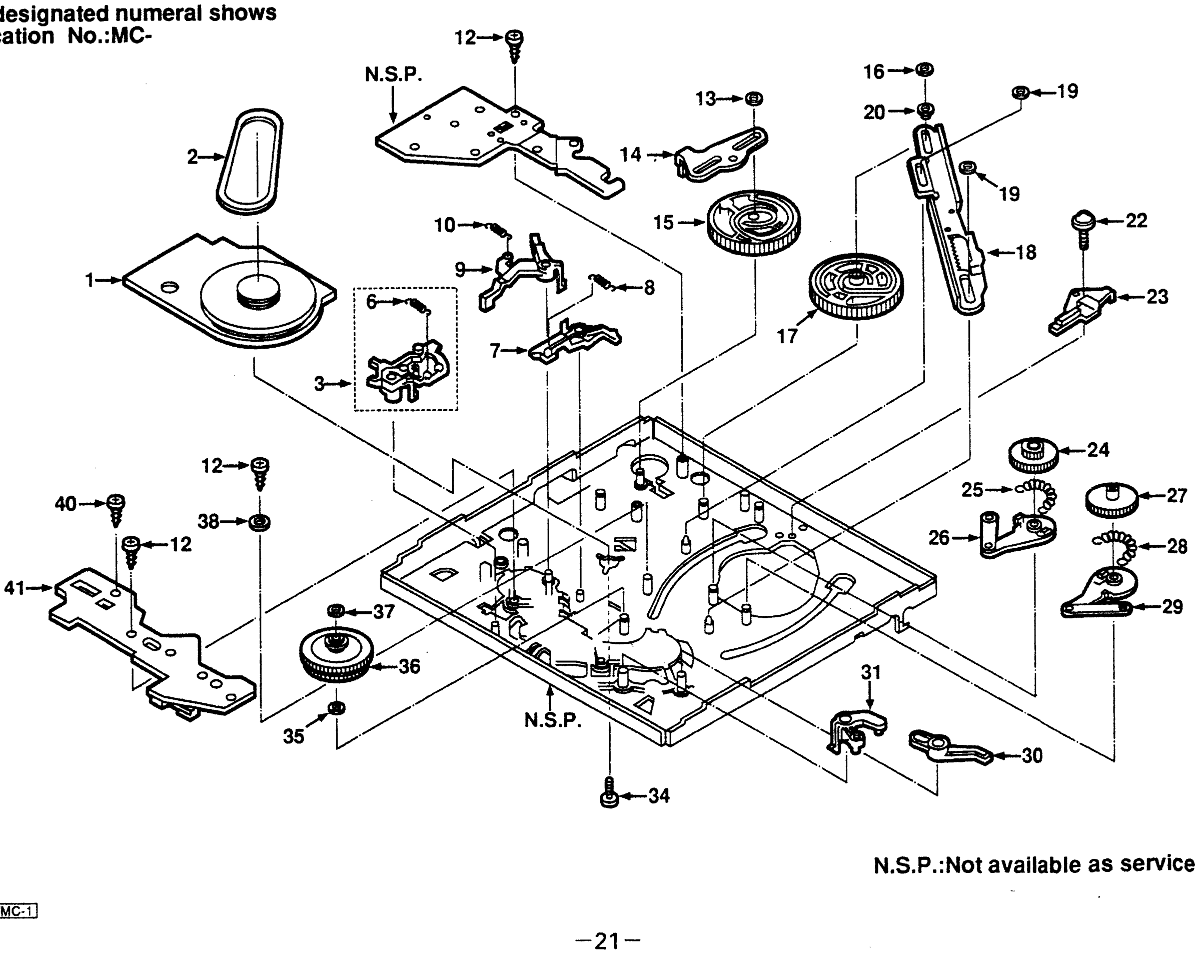
N.S.P.

N.S.P.:Not available as service parts

92TP1/MB-2

EXPLODED VIEW OF MECHANISM PARTS 3

Undesignated numeral shows
Location No.:MC-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N.S.P.
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N.S.P.:Not available as service parts

93TP1/MC-1

ELECTRICAL PARTS

NOTE-2

NOTE;

1. **Materials of Capacitors and Resistors are abbreviated as follows;**

   Resistors
   - **MT-FILM ....Metallized Film Resistor**
   - **MT-GLAZE ....Metallized Glaze Reistor**
   - **OXIDE-MT ....Oxide Metallized film Resistor**

   Capacitors
   - **MT-POLYEST ....Metallized Polyester capacitor**
   - **MT-COMPO ....Metallized Composite capacitor**
   - **TA-SOLID.................Tantalum Solid Capacitor**
   - **AL-SOLID.................Aluminium Solid Capacitor**
   - **NP-ELECT ....Non-Polarized Electrolytic Capacitor**
   - **OS-SOLID ....Aluminium Solid Capacitors with Organic Semiconductive Electrolytic Capacitor**
   - **DL-ELECT.................Double Layered Electrolytic Capacitor**
2. **Tolerance of Capacitor (10pF over) and Resistor are noted with follow symbols.**

   F..................± 1% G ....± 2% J ....± 5% K.................± 10%

   M................± 20% N ....± 30% Z ....± 80% ~ –20%
3. **Capacitors**

   U: μH P: pF
4. **Inductors**

   UH: μH MH: mH
5. **N.S.P.; Not available as servise parts.**

COMPL PWB,CP-1-A

COMPL.NO.6913 4554 (VCR 3714SV ONLY)
COMPL.NO.6913 6695 (VCR 3714VPS/S ONLY)

(SEMICONDUCTORS)

LOCATION	PARTS NO.	DESCRIPTION
Q1002	3614 4379	TR 2SC4038-Q-TL2
OR	3614 4378	TR 2SC4038-R-TL2
OR		TR 2SD1991A-Q-(TA)
OR		TR 2SD1991A-R-(TA)
Q1003	3614 4614	TR 2SA1561-TL2-Q
OR	3614 4492	TR 2SA1561-TL2-R
OR		TR 2SB1320A-Q-(TA)
OR		TR 2SB1320A-R-(TA)
Q1004	3614 4614	TR 2SA1561-TL2-Q
OR	3614 4492	TR 2SA1561-TL2-R
OR		TR 2SB1320A-Q-(TA)
OR		TR 2SB1320A-R-(TA)
Q1006	3614 4379	TR 2SC4038-Q-TL2
OR	3614 4378	TR 2SC4038-R-TL2
OR		TR 2SD1991A-Q-(TA)
OR		TR 2SD1991A-R-(TA)
Q1007	3614 4379	TR 2SC4038-Q-TL2
OR	3614 4378	TR 2SC4038-R-TL2
OR		TR 2SD1991A-Q-(TA)
OR		TR 2SD1991A-R-(TA)
Q1010	3614 4614	TR 2SA1561-TL2-Q (VCR 3714VPS/S ONLY)
OR	3614 4492	TR 2SA1561-TL2-R (VCR 3714VPS/S ONLY)
OR		TR 2SB1320A-Q-(TA) (VCR 3714VPS/S ONLY)
OR		TR 2SB1320A-R-(TA) (VCR 3714VPS/S ONLY)
Q1011	3614 4377	TR DTC144EL-TL2
OR		TR UN6213-(TA)
Q1012	3614 4379	TR 2SC4038-Q-TL2
OR	3614 4378	TR 2SC4038-R-TL2
OR		TR 2SD1991A-Q-(TA)
OR		TR 2SD1991A-R-(TA)
Q1013	3614 4377	TR DTC144EL-TL2
OR		TR UN6213-(TA)
Q1014	3614 4379	TR 2SC4038-Q-TL2
OR	3614 4378	TR 2SC4038-R-TL2
OR		TR 2SD1991A-Q-(TA)
OR		TR 2SD1991A-R-(TA)
Q1101	3614 4614	TR 2SA1561-TL2-Q
OR	3614 4492	TR 2SA1561-TL2-R
OR		TR 2SB1320A-Q-(TA)
OR		TR 2SB1320A-R-(TA)
Q1102	3614 4379	TR 2SC4038-Q-TL2
OR	3614 4378	TR 2SC4038-R-TL2
OR		TR 2SD1991A-Q-(TA)
OR		TR 2SD1991A-R-(TA)
Q1151	3614 4620	TR DTC124EL-TL2
OR		TR UN6212-(TA)
Q1152	3614 4614	TR 2SA1561-TL2-Q
Q1152	3614 4492	TR 2SA1561-TL2-R
OR		TR 2SB1320A-Q-(TA)
OR		TR 2SB1320A-R-(TA)
Q1312	3614 4379	TR 2SC4038-Q-TL2
OR	3614 4378	TR 2SC4038-R-TL2
OR		TR 2SD1991A-Q-(TA)
OR		TR 2SD1991A-R-(TA)
Q1313	3614 4377	TR DTC144EL-TL2
OR		TR UN6213-(TA)
Q1601	3614 5281	TR 2SA608-F-SPA-AC
OR	3614 5540	TR 2SA933S-T93-R
Q1651	3614 4377	TR DTC144EL-TL2
OR		TR UN6213-(TA)
Q1652	3614 4379	TR 2SC4038-Q-TL2
OR	3614 4378	TR 2SC4038-R-TL2
OR		TR 2SD1991A-Q-(TA)
OR		TR 2SD1991A-R-(TA)
Q1653	3614 4379	TR 2SC4038-Q-TL2
OR	3614 4378	TR 2SC4038-R-TL2
OR		TR 2SD1991A-Q-(TA)
OR		TR 2SD1991A-R-(TA)
Q1654	3614 4614	TR 2SA1561-TL2-Q
OR	3614 4492	TR 2SA1561-TL2-R
OR		TR 2SB1320A-Q-(TA)
OR		TR 2SB1320A-R-(TA)
Q2001	3614 4464	TR 2SD734-E-AA
OR	3614 3739	TR 2SD734-F-AA
Q2002	3614 4377	TR DTC144EL-TL2
OR		TR UN6213-(TA)
Q2003	3614 7730	TR DTA124ES-DCTP
OR	3614 4307	TR 2SA1346-AC
Q3001	3614 5231	TR DTC114ES-DCTP
OR	3614 5218	TR 2SC3402-AC
Q3002	3614 5231	TR DTC114ES-DCTP
OR	3614 5218	TR 2SC3402-AC
Q3201	3614 4691	TR KSC2785-Y
OR	3614 3781	TR 2SC1740S-DCTP-Q
OR	3614 5240	TR 2SC1740S-DCTP-R
OR	3614 4947	TR 2SC536-E-SPA-AC
OR	3614 3969	TR 2SC536-F-SPA-AC
Q3202	3614 4691	TR KSC2785-Y
OR	3614 3781	TR 2SC1740S-DCTP-Q
OR	3614 5240	TR 2SC1740S-DCTP-R
OR	3614 4947	TR 2SC536-E-SPA-AC
OR	3614 3969	TR 2SC536-F-SPA-AC
Q3203	3614 4690	TR KSA1175-Y
OR	3614 4942	TR 2SA608-E-SPA-AC
OR	3614 5281	TR 2SA608-F-SPA-AC
OR	3614 4542	TR 2SA933S-TP-Q
OR	3614 5540	TR 2SA933S-T93-R
Q3504	3614 4377	TR DTC144EL-TL2
OR		TR UN6213-(TA)

LOCATION	PARTS NO.	DESCRIPTION
Q3553	3614 4379	TR 2SC4038-Q-TL2
OR	3614 4378	TR 2SC4038-R-TL2
OR		TR 2SD1991A-Q-(TA)
OR		TR 2SD1991A-R-(TA)
Q5101	3614 4541	TR 2SA1703-S-AN
OR	3614 8822	TR 2SB1322A-R(TA)
OR		TR 2SB1322A-S(TA)
Q5102	3614 4694	TR 2SC4483-S-AN
OR	3614 8824	TR 2SD1994-R (TA)
OR	3614 7686	TR 2SD1994-S (TA)
Q5103	3614 5231	TR DTC114ES-DCTP
OR	3614 5218	TR 2SC3402-AC
Q6001		TR 2SK1104-(TA) P
OR		TR 2SK1104-(TA) Q
OR		TR 2SK1104-(TA) R
OR	3614 7523	TR 2SK222-D-AA
OR		TR 2SK222-E-AA
OR	3614 7748	TR 2SK772-E-AC
OR		TR 2SK772-F-AC
Q6002	3614 4690	TR KSA1175-Y
OR	3614 4942	TR 2SA608-E-SPA-AC
OR	3614 5281	TR 2SA608-F-SPA-AC
OR	3614 4542	TR 2SA933S-TP-Q
OR	3614 5540	TR 2SA933S-T93-R
Q6004	3614 4691	TR KSC2785-Y
OR	3614 3781	TR 2SC1740S-DCTP-Q
OR	3614 5240	TR 2SC1740S-DCTP-R
OR	3614 4947	TR 2SC536-E-SPA-AC
OR	3614 3969	TR 2SC536-F-SPA-AC
Q6611	3614 4690	TR KSA1175-Y
OR	3614 4942	TR 2SA608-E-SPA-AC
OR	3614 5281	TR 2SA608-F-SPA-AC
OR	3614 4542	TR 2SA933S-TP-Q
OR	3614 5540	TR 2SA933S-T93-R
Q6621	3614 4691	TR KSC2785-Y
OR	3614 3781	TR 2SC1740S-DCTP-Q
OR	3614 5240	TR 2SC1740S-DCTP-R
OR	3614 4947	TR 2SC536-E-SPA-AC
OR	3614 3969	TR 2SC536-F-SPA-AC
Q6901	3614 4691	TR KSC2785-Y
OR	3614 3781	TR 2SC1740S-DCTP-Q
OR	3614 5240	TR 2SC1740S-DCTP-R
OR	3614 4947	TR 2SC536-E-SPA-AC
OR	3614 3969	TR 2SC536-F-SPA-AC
Q6902	3614 4690	TR KSA1175-Y
OR	3614 4942	TR 2SA608-E-SPA-AC
OR	3614 5281	TR 2SA608-F-SPA-AC
OR	3614 4542	TR 2SA933S-TP-Q
OR	3614 5540	TR 2SA933S-T93-R
Q6903	3614 4691	TR KSC2785-Y
OR	3614 3781	TR 2SC1740S-DCTP-Q
OR	3614 5240	TR 2SC1740S-DCTP-R
OR	3614 4947	TR 2SC536-E-SPA-AC
OR	3614 3969	TR 2SC536-F-SPA-AC
Q6904	3614 4377	TR DTC144EL-TL2
OR		TR UN6213-(TA)
Q6921	3614 4546	TR 2SC2960-F-SPA-AC
OR	3614 4547	TR 2SC2960-G-SPA-AC
(INTEGRATED CIRCUITS)		
IC101	3771 6752	IC LA7345M
IC111	3771 6749	IC LC89925
IC201	3771 6759	IC LA7285M
IC301		IC LC866648V-5420
OR	3771 6792	IC LC866648V-5457
IC302	3771 5425	IC LB1641
IC303	3771 8824	IC MN1380-L
OR	3771 6775	IC MN1381-L(TA)
IC321	3771 6791	IC LC74760M-8783
IC351		IC BU2890BK
OR	3771 6761	IC BU2890DK
OR	3771 6755	IC XRU2890BK
IC501	3771 6760	IC STR-M6549
IC511	3771 5863	IC L5431-AA
IC512	3771 6750	IC PQ12SZ11
IC601	3771 5050	IC L5631
OR	3771 4088	IC UPC574J
IC602	3771 6748	IC LE24C04S1
OR		IC X24C04P-C7346
IC691	3771 4684	IC LA7910
(DIODES)		
D1003	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D1007	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D1015	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D1671	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D3001	3656 3573	DIODE RB441Q T-77
D3002	3656 3237	ZENER DIODE GZS5.6Y-BT
OR	3656 3130	ZENER DIODE MTZJ5.6B-T-77
D3003	3656 3238	ZENER DIODE GZS8.2Y-BT
OR	3656 3129	ZENER DIODE MTZJ8.2B-T-77
D3103	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D3107	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D3110	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D3112	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D3121	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D3122	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D3123	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D3201	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D3202	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D3502	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D5001	3656 3652	DIODE DBC10G
D5003	3656 3178	DIODE AP01C-V0
D5004	3656 3131	DIODE 1SS244-T-77
D5011	⚠ 3681 1830	PHOTO COUPLE PC120FB
D5101	3656 3331	DIODE RL2Z-LF-B1
D5102	3656 3653	DIODE ERC30-02L38
D5103	3656 3181	DIODE AG01-V2
OR	3656 3080	DIODE ERA38-04-V5
D5104	3656 3131	DIODE 1SS244-T-77
D5105	3656 3181	DIODE AG01-V2
OR	3656 3080	DIODE ERA38-04-V5
D5109	3656 3455	ZENER DIODE MTZJ4.7B-T-77
D5110	3656 3368	DIODE AK04-V2
D5111	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D5112	3656 8811	ZENER DIODE MTZJ5.1C-T-77
D5113	3656 3055	DIODE DSK10C-BT
OR	3656 3056	DIODE ERA15-02-V5
D5114	3656 3131	DIODE 1SS244-T-77
D6601	3656 3392	ZENER DIODE GZS5.6X-BT
OR	3656 3081	ZENER DIODE MTZ5.6B-T-77
D6901	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D6902	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D6903	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77

LOCATION	PARTS NO.	DESCRIPTION
(CRYSTAL DEVICES)		
X1001	4421 2238	OSC,CRYSTAL 4.433619MHZ
OR		OSC,CRYSTAL 4.433619MHZ
OR		OSC,CRYSTAL 4.433619MHZ
X3001	4421 2214	RESONATOR,CERAMIC13.92MHZ
X3002		OSC,CRYSTAL 32.768KHZ
OR	4421 2348	OSC,CRYSTAL 32KHZ
X3201	4421 2466	CRYSTAL
OR		OSC,CRYSTAL 17.734475MHZ
(VARIABLE RESISTORS)		
VR101		VR,SEMI 22KB
OR		VR,SEMI 22KB
VR102	3112 9897	VR,SEMI 2.2KB
OR		VR,SEMI 2.2KB
VR103		VR,SEMI 4.7KB
OR		VR,SEMI 4.7KB
VR104		VR,SEMI 10KB
OR		VR,SEMI 10KB
VR201	3111 8726	SEMI VR 100KB
OR		VR,SEMI 100KB
VR351	3111 8728	SEMI VR 220KB
OR		VR,SEMI 220KB
(TRIMMER)		
CT321	3412 9041	TRIMMER
(INDUCTORS)		
L1002	4543 2197	COIL,INDUCTOR 1.0UHM
OR	4543 3478	HF CHOKE 1.0UHK
L1004	4543 8727	COIL,INDUCTOR 150UHK
OR		HF CHOKE 150UHK
L1005	4543 3337	COIL,INDUCTOR 220UHK
OR		HF CHOKE 220UHK
L1007	4543 3254	COIL,INDUCTOR 3.3UHK
OR		HF CHOKE 3.3UHK
L1008	4543 3252	COIL,INDUCTOR 15UHK
OR		HF CHOKE 15UHK
L1009	4543 3242	COIL,INDUCTOR 2.2UHM
OR		HF CHOKE 2.2UHK
L1010	4543 8728	COIL,INDUCTOR 27UHK
OR		HF CHOKE 27UHK
L1011	4543 8728	COIL,INDUCTOR 27UHK
OR		HF CHOKE 27UHK
L1012	4543 3933	COIL,INDUCTOR 39UHJ
OR		HF CHOKE 39UHJ
L1013	4543 8725	COIL,INDUCTOR 33UHK
OR		HF CHOKE 33UHK
L1014	4543 3933	COIL,INDUCTOR 39UHJ
OR		HF CHOKE 39UHJ
L1101	4543 3266	COIL,INDUCTOR 82UHK
OR		HF CHOKE 82UHK
L2002	4543 3871	HF CHOKE 10000UHJ
L2003	4543 3929	COIL,INDUCTOR 560UHJ
L2051	4543 2195	CORE BEADCORES(VCR 3714VPS/S ONLY)
OR	4552 6866	FERRITE CORE(VCR 3714VPS/S ONLY)
L3001	4552 6823	LINE FILTER
L3002	4552 6823	LINE FILTER
L3201	4543 8733	COIL,INDUCTOR 5.6UHJ
OR		HF CHOKE 5.6UHJ
L5001	⚠ 4543 3935	COIL,LINE FILTER (VCR 3714VPS/S ONLY)
OR	⚠ 4543 3439	LF CHOKE 1MH1A250V (VCR 3714VPS/S ONLY)
L5002	⚠ 4552 6978	COIL,LINE FILTER
OR	⚠	LINE FILTER
L5003	4543 4008	FERRITE CORE
L5101	4543 3724	COIL,INDUCTOR 10UH K
OR		INDUCTOR,10U K
L5102	4543 4009	COIL,INDUCTOR 22UH K
OR		INDUCTOR,22U K

LOCATION	PARTS NO.	DESCRIPTION			
L6002	4543 1989	COIL,INDUCTOR 10UHK			
OR		HF CHOKE 10UHK			
L6003	4543 1989	COIL,INDUCTOR 10UHK			
OR		HF CHOKE 10UHK			
L6004	4543 1989	COIL,INDUCTOR 10UHK			
OR		HF CHOKE 10UHK			
L6005	4543 1989	COIL,INDUCTOR 10UHK			
OR		HF CHOKE 10UHK			
L6601	4543 2197	COIL,INDUCTOR 1.0UHM			
OR	4543 3478	HF CHOKE 1.0UHK			
L6603	4543 1989	COIL,INDUCTOR 10UHK			
OR		HF CHOKE 10UHK			
L6621	4543 2199	COIL,INDUCTOR 100UHK			
OR		HF CHOKE 100UHK			
(TRANSFORMERS)					
T2001	4543 2260	OSC COIL 70KHZ			
OR	4552 4370	TRANS,OSC 70KHZ			
T5001	⚠ 4511 3517	TRANS,POWER,PULSE			
T6901	4552 7548	TRANS,IF			
OR		TRANS,IF			
(DELAY LINES)					
DL101	4342 1036	DELAY LINE(COMB)			
OR		DELAY LINE(COMB)			
(CAPACITORS)					
C1001		CERAMIC	47P	J	50V
C1002		CERAMIC	220P	J	50V
C1003		CERAMIC	100P	J	50V
C1005		ELECT	0.47U	M	50V
C1006		CERAMIC	4.7P	K	50V
C1007		CERAMIC	390P	J	50V
C1009		CERAMIC	4.7P	K	50V
C1010		CERAMIC	82P	J	50V
C1011		ELECT	1U	M	50V
C1012		ELECT	10U	M	16V
C1013		ELECT	0.47U	M	50V
C1014		CERAMIC	0.01U	M	16V
C1015		CERAMIC	0.022U	J	16V
C1016		CERAMIC	0.022U	J	16V
C1021		CERAMIC	390P	J	50V
C1022		CERAMIC	0.1U	J	16V
C1023		CERAMIC	68P	J	50V
C1027		CERAMIC	0.01U	M	16V
C1029		ELECT	10U	M	16V
C1030		ELECT	1U	M	50V
C1031		ELECT	1U	M	50V
C1032		CERAMIC	0.047U	J	16V
C1033		CERAMIC	0.022U	J	16V
C1034		CERAMIC	75P	J	50V
C1036		ELECT	1U	M	50V
C1037		ELECT	2.2U	M	50V
C1038		CERAMIC	0.022U	J	16V
C1039		CERAMIC	0.047U	J	16V
C1040		CERAMIC	0.01U	M	16V
C1041		ELECT	10U	M	16V
C1042		CERAMIC	0.047U	J	16V
C1043		CERAMIC	0.1U	Z	50V
C1044		ELECT	220U	M	6.3V
C1046		ELECT	10U	M	16V
C1047		ELECT	10U	M	16V
C1048		CERAMIC	0.01U	M	16V
C1049		CERAMIC	33P	J	50V
C1050		CERAMIC	0.01U	M	16V
C1051		CERAMIC	470P	J	50V
C1052		CERAMIC	0.01U	M	16V
C1053		CERAMIC	0.01U	M	16V
C1054		ELECT	47U	M	6.3V
C1058		CERAMIC	27P	J	50V
C1059		CERAMIC	18P	J	50V
C1060		CERAMIC	27P	J	50V
C1061		CERAMIC	22P	J	50V
C1062		CERAMIC	180P	J	50V
C1092		CERAMIC	100P	K	50V
C1093		CERAMIC	0.1U	Z	50V

LOCATION	PARTS NO.	DESCRIPTION			
C1101		ELECT	47U	M	6.3V
C1102		CERAMIC	0.01U	M	16V
C1104		CERAMIC	68P	J	50V
C1105		CERAMIC	47P	J	50V
C1106		CERAMIC	4.7P	K	50V
C1107		CERAMIC	47P	J	50V
C1109		CERAMIC	0.01U	M	16V
C1110		ELECT	1U	M	50V
C1311		CERAMIC	0.022U	J	16V
C1601		CERAMIC	0.1U	Z	50V
C1652		CERAMIC	0.1U	Z	50V
C2002		CERAMIC	820P	K	50V
C2004		ELECT	33U	M	6.3V
C2005		CERAMIC	0.018U	K	16V
C2009		ELECT	22U	M	16V
C2010		ELECT	47U	M	16V
C2013		CERAMIC	0.015U	J	25V
C2016		ELECT	4.7U	M	25V
C2017		ELECT	10U	M	16V
C2019		ELECT	47U	M	16V
C2020		CERAMIC	220P	K	50V
C2021		POLYPRO	0.033U	J	100V
C2022		CERAMIC	0.01U	K	16V
C2024		CERAMIC	0.01U	K	16V
C2051		CERAMIC	120P	K	50V
		(VCR 3714VPS/S ONLY)			
C2091		CERAMIC	0.1U	Z	50V
C2092		CERAMIC	2200P	M	16V
C2101		CERAMIC	0.1U	Z	50V
C3001		ELECT	2.2U	M	50V
C3002		CERAMIC	0.01U	M	16V
C3003		CERAMIC	0.1U	Z	50V
C3004		CERAMIC	0.01U	M	16V
C3005		CERAMIC	0.01U	M	16V
C3008		ELECT	10U	M	16V
C3009		CERAMIC	0.01U	M	16V
C3010		CERAMIC	10P	J	50V
C3011		CERAMIC	20P	J	50V
C3012		CERAMIC	0.01U	M	16V
C3013		CERAMIC	0.1U	Z	50V
C3015		CERAMIC	0.1U	Z	50V
C3016		CERAMIC	0.01U	M	16V
C3017		ELECT	470U	M	6.3V
C3019		CERAMIC	0.1U	Z	50V
C3020		CERAMIC	1000P	K	50V
C3021		CERAMIC	47P	J	50V
C3022		DL-ELECT	0.1F	Z	5.5V
C3023		CERAMIC	12P	J	50V
C3201		CERAMIC	15P	J	50V
C3202		CERAMIC	15P	J	50V
C3203		ELECT	1U	M	50V
C3204		CERAMIC	10P	J	50V
C3205		CERAMIC	24P	J	50V
C3206		CERAMIC	0.022U	K	16V
C3207		CERAMIC	6800P	K	16V
C3208		NP-ELECT	1U	M	50V
C3211		ELECT	1U	M	50V
C3212		CERAMIC	100P	K	50V
C3213		ELECT	47U	M	6.3V
C3214		ELECT	10U	M	16V
C3216		ELECT	47U	M	6.3V
C3217		CERAMIC	0.01U	M	16V
C3501		CERAMIC	0.015U	K	16V
C3502		CERAMIC	6800P	K	16V
C3503		CERAMIC	0.015U	K	16V
C3505		ELECT	22U	M	16V
C3506		CERAMIC	6800P	K	16V
C3508		ELECT	22U	M	16V
C3511		CERAMIC	220P	K	50V
C3512		MT-POLYEST	0.039U	J	50V
C3513		CERAMIC	0.068U	K	16V
C3514		POLYESTER	0.1U	K	50V
C3515		POLYESTER	0.022U	K	50V
C3516		CERAMIC	2200P	K	16V
C3517		CERAMIC	1500P	K	16V

LOCATION	PARTS NO.	DESCRIPTION			
C3522		CERAMIC	1000P	K	50V
C3523		ELECT	1U	M	50V
C3524		CERAMIC	0.01U	M	16V
C3525		ELECT	0.47U	M	50V
C3526		CERAMIC	0.022U	K	16V
C3530		ELECT	47U	M	6.3V
C3536		ELECT	220U	M	6.3V
C3540		CERAMIC	100P	K	50V
C3551		MT-POLYEST	0.12U	J	50V
C3552		CERAMIC	56P	J	50V
C3553		ELECT	1U	M	50V
C3554		CERAMIC	150P	J	50V
C3556		CERAMIC	1000P	K	50V
C3558		ELECT	33U	M	16V
C3570		CERAMIC	0.1U	Z	50V
C5001	⚠ 3261 9057	MT-POLYEST	0.22U	M	250V
C5002	⚠ 3261 9056	MT-POLYEST	0.068U	M	250V
C5003	3422 0154	ELECT	47U	M	400V
C5004	3422 0155	ELECT	2.2U	M	250V
C5005	3261 9052	CERAMIC	39P	J	1K
C5006		ELECT	10U	M	35V
C5020	⚠ 3422 0156	CERAMIC	1000P	M	400V
C5022	⚠ 3422 0156	CERAMIC	1000P	M	400V
C5101		ELECT	1000U	M	16V
C5102		ELECT	470U	M	16V
C5104		ELECT	1000U	M	10V
C5105		ELECT	470U	M	6.3V
C5106		ELECT	47U	M	50V
C5107		ELECT	47U	M	25V
C5108		ELECT	220U	M	6.3V
C5110		MT-POLYEST	0.047U	J	50V
C5111		CERAMIC	0.1U	Z	50V
C5112		ELECT	100U	M	16V
C5113		CERAMIC	0.01U	M	16V
C5114		ELECT	47U	M	6.3V
C6001		CERAMIC	0.1U	Z	50V
C6002		ELECT	4.7U	M	25V
C6003		ELECT	1U	M	50V
C6004		MT-POLYEST	0.1U	J	50V
C6005		ELECT	4.7U	M	25V
C6006		ELECT	47U	M	16V
C6007		CERAMIC	0.047U	Z	16V
C6009		ELECT	22U	M	50V
C6010		CERAMIC	0.1U	Z	50V
C6017		CERAMIC	470P	K	50V
C6601		ELECT	10U	M	16V
C6602		ELECT	10U	M	16V
C6611		ELECT	22U	M	16V
C6621		CERAMIC	33P	J	50V
C6622		CERAMIC	39P	J	50V
C6901		CERAMIC	0.1U	Z	50V
C6902		ELECT	10U	M	16V
C6903		CERAMIC	0.022U	Z	25V
C6904		ELECT	0.22U	M	50V
C6921		CERAMIC	0.1U	Z	50V
C6924		MT-POLYEST	0.33U	J	50V
C6925		MT-POLYEST	0.22U	J	50V
C6926		ELECT	100U	M	16V
C6927		CERAMIC	180P	K	50V
(RESISTORS)					
R1001		CARBON	3.3K	JA	1/4W
R1002		CARBON	1K	JA	1/4W
R1003		CARBON	3.9K	JA	1/4W
R1004		CARBON	1K	JA	1/4W
R1005		CARBON	750	JA	1/4W
R1006		CARBON	820	JA	1/4W
R1007		CARBON	1K	JA	1/4W
R1008		CARBON	2.7K	JA	1/4W
R1009		CARBON	820	JA	1/4W
R1011		CARBON	100K	JA	1/4W
R1012		CARBON	1K	JA	1/4W
R1013		CARBON	1K	JA	1/4W
R1014		CARBON	2.2K	JA	1/4W
R1018		CARBON	1K	JA	1/4W
R1019		CARBON	22K	JA	1/4W

LOCATION	PARTS NO.	DESCRIPTION			
R1020		CARBON	22K	JA	1/4W
R1021		CARBON	1K	JA	1/4W
R1022		CARBON	1K	JA	1/4W
R1023		CARBON	1K	JA	1/4W
R1026		CARBON	1M	JA	1/4W
R1027		CARBON	8.2K	JA	1/4W
R1028		CARBON	1.8K	JA	1/4W
R1029		CARBON	1K	JA	1/4W
R1032		CARBON	22K	JA	1/4W
R1033		CARBON	1K	JA	1/4W
R1035		CARBON	470	JA	1/4W
R1036		CARBON	1.5K	JA	1/4W
R1038		CARBON	1K	JA	1/4W
R1040		CARBON	150	JA	1/4W
R1041		CARBON	100	JA	1/4W
		(VCR 3714VPS/S ONLY)			
R1042		CARBON	1K	JA	1/4W
		(VCR 3714VPS/S ONLY)			
R1044		CARBON	12K	JA	1/4W
R1046		CARBON	33K	JA	1/4W
R1047		CARBON	8.2K	JA	1/4W
R1048		CARBON	4.7K	JA	1/4W
R1049		CARBON	12K	JA	1/4W
R1052		CARBON	1K	JA	1/4W
R1053		CARBON	330	JA	1/4W
R1054		CARBON	3.3K	JA	1/4W
R1055		CARBON	1.2K	JA	1/4W
R1058		CARBON	4.7K	JA	1/4W
R1059		CARBON	1.8K	JA	1/4W
R1063		CARBON	22K	JA	1/4W
R1071		CARBON	2.7K	JA	1/4W
R1072		CARBON	1.8K	JA	1/4W
R1104		CARBON	560	JA	1/4W
R1105		CARBON	1K	JA	1/4W
R1106		CARBON	1K	JA	1/4W
R1107		CARBON	2.2K	JA	1/4W
R1153		CARBON	4.7K	JA	1/4W
R1154		CARBON	4.7K	JA	1/4W
R1601		CARBON	560	JA	1/4W
R1603		CARBON	10	JA	1/4W
R1651		CARBON	8.2K	JA	1/4W
R1652		CARBON	12K	JA	1/4W
R1653		CARBON	56	JA	1/4W
R1654		CARBON	27K	JA	1/4W
R1655		CARBON	3K	JA	1/4W
R1656		CARBON	1.2K	JA	1/4W
R1657		CARBON	5.6K	JA	1/4W
R1658		CARBON	5.6K	JA	1/4W
R1659		CARBON	1.2K	JA	1/4W
R1671		CARBON	100	JA	1/4W
R1691		CARBON	820	JA	1/4W
R1692		CARBON	820	JA	1/4W
R2001		CARBON	100	JA	1/4W
R2002		CARBON	2.7K	JA	1/4W
R2003		CARBON	51	JA	1/4W
R2004		CARBON	390K	JA	1/4W
R2005		CARBON	6.2K	JA	1/4W
R2009		CARBON	1M	JA	1/4W
R2010		CARBON	10K	JA	1/4W
R2011		CARBON	15K	JA	1/4W
R2012		CARBON	33K	JA	1/4W
R2013		CARBON	6.8K	JA	1/4W
R2014		CARBON	1.2K	JA	1/4W
R2018		CARBON	22K	JA	1/4W
R2021		CARBON	3.3	JA	1/4W
R2022		CARBON	47	JA	1/4W
R2023		CARBON	15K	JA	1/4W
R2024		CARBON	4.7	JA	1/4W
R2091		CARBON	2.7K	JA	1/4W
R2101		CARBON	39K	JA	1/4W
R2102		CARBON	27K	JA	1/4W
R2110		CARBON	1K	JA	1/4W
R2111		CARBON	750	JA	1/4W
R3001	⚠ 3151 7950	FUSIBLE RES	3.3	JA	1/2W
R3002		CARBON	750	JA	1/4W
R3004		CARBON	1.5K	JA	1/4W

LOCATION	PARTS NO.	DESCRIPTION			
R3008		CARBON	4.7K	JA	1/4W
R3009		CARBON	4.7K	JA	1/4W
R3010		CARBON	4.7K	JA	1/4W
R3011		CARBON	47K	JA	1/4W
R3012		CARBON	4.7K	JA	1/4W
R3013		CARBON	4.7K	JA	1/4W
R3014		CARBON	200K	JA	1/4W
R3015		CARBON	200K	JA	1/4W
R3018		CARBON	10K	JA	1/4W
R3020		CARBON	10K	JA	1/4W
R3022		CARBON	100K	JA	1/4W
R3023		CARBON	1K	JA	1/4W
R3024		CARBON	1K	JA	1/4W
R3025		CARBON	1K	JA	1/4W
R3026		CARBON	1K	JA	1/4W
R3032		CARBON	33K	JA	1/4W
R3034		CARBON	12K	JA	1/4W
R3035		CARBON	10K	JA	1/4W
R3036		CARBON	10K	JA	1/4W
R3045		CARBON	4.7K	JA	1/4W
R3061		CARBON	47K	JA	1/4W
R3062		CARBON	33K	JA	1/4W
R3101		CARBON	100K	JA	1/4W
R3102		CARBON	100K	JA	1/4W
R3103		CARBON	100K	JA	1/4W
R3104		CARBON	100K	JA	1/4W
R3201		CARBON	1K	JA	1/4W
R3202		CARBON	1.5K	JA	1/4W
R3203		CARBON	6.8K	JA	1/4W
R3204		CARBON	2.2K	JA	1/4W
R3205		CARBON	1.5K	JA	1/4W
R3206		CARBON	100	JA	1/4W
R3207		CARBON	10K	JA	1/4W
R3208		CARBON	220	JA	1/4W
R3209		CARBON	100K	JA	1/4W
R3210		CARBON	6.8K	JA	1/4W
R3211		CARBON	22K	JA	1/4W
R3212		CARBON	4.3K	JA	1/4W
R3213		CARBON	1K	JA	1/4W
R3501		CARBON	100K	JA	1/4W
R3502		CARBON	100K	JA	1/4W
R3503		CARBON	330K	JA	1/4W
R3504		CARBON	150K	JA	1/4W
R3505		CARBON	15K	JA	1/4W
R3506		CARBON	220K	JA	1/4W
R3507		CARBON	150K	JA	1/4W
R3508		CARBON	27K	JA	1/4W
R3516		CARBON	10K	JA	1/4W
R3517		CARBON	47K	JA	1/4W
R3518		CARBON	47K	JA	1/4W
R3520		CARBON	330K	JA	1/4W
R3521		CARBON	10K	JA	1/4W
R3525		CARBON	1K	JA	1/4W
R3526		CARBON	2.2K	JA	1/4W
R3527		CARBON	1K	JA	1/4W
R3528		CARBON	510	JA	1/4W
R3529		CARBON	510	JA	1/4W
R3537		CARBON	8.2K	JA	1/4W
R3546		CARBON	4.7K	JA	1/4W
R3547		CARBON	15K	JA	1/4W
R3549		CARBON	10K	JA	1/4W
R3550		CARBON	8.2K	JA	1/4W
R3556		CARBON	10K	JA	1/4W
R3557		CARBON	330K	JA	1/4W
R3558		CARBON	470	JA	1/4W
R3560		CARBON	1K	JA	1/4W
R5001	⚠ 3151 7954	CARBON	2.7M	KA	1/2W
R5003		OXIDE-MT	68K	JA	2W
R5005		CARBON	680K	JA	1/2W
R5006		CARBON	680K	JA	1/2W
R5009		CARBON	10	JA	1/4W
R5010	3151 7910	OXIDE-MT	0.47	JA	1W
R5105		MT-FILM	560	FD	1/4W
R5106		MT-FILM	620	FD	1/4W
R5107		CARBON	430	JA	1/4W
R5108		CARBON	1K	JA	1/4W

LOCATION	PARTS NO.	DESCRIPTION			
R5109		CARBON	6.2K	JA	1/4W
R5110		CARBON	2.2K	JA	1/4W
R5111		CARBON	1K	JA	1/4W
R5112		CARBON	12K	JA	1/4W
R5113		CARBON	240	JA	1/4W
R5114		CARBON	240	JA	1/4W
R5115		MT-FILM	82	FD	1/4W
R5117		CARBON	240	JA	1/4W
R5118		CARBON	240	JA	1/4W
R5120	⚠ 3151 7956	FUSIBLE RES	3.9	JA	1/4W
R6001		CARBON	330	JA	1/4W
R6002		CARBON	390	JA	1/4W
R6003		CARBON	1M	JA	1/4W
R6004		CARBON	390K	JA	1/4W
R6005		CARBON	470K	JA	1/4W
R6006		CARBON	390K	JA	1/4W
R6007		CARBON	270K	JA	1/4W
R6008		CARBON	1K	JA	1/4W
R6010		CARBON	100K	JA	1/4W
R6011		CARBON	100K	JA	1/4W
R6014		CARBON	2K	JA	1/4W
R6611		CARBON	1.3K	JA	1/4W
R6612		CARBON	1.8K	JA	1/4W
R6613		CARBON	560	JA	1/4W
R6621		CARBON	5.6K	JA	1/4W
R6622		CARBON	1K	JA	1/4W
R6623		CARBON	820	JA	1/4W
R6624		CARBON	1.8K	JA	1/4W
R6901		CARBON	1K	JA	1/4W
R6902		CARBON	330	JA	1/4W
R6903		CARBON	620	JA	1/4W
R6904		CARBON	10K	JA	1/4W
R6905		CARBON	330K	JA	1/4W
R6906		CARBON	10K	JA	1/4W
R6907		CARBON	3.3K	JA	1/4W
R6908		CARBON	82	JA	1/4W
R6909		CARBON	1K	JA	1/4W
R6910		CARBON	510	JA	1/4W
R6911		CARBON	5.6K	JA	1/4W
R6912		CARBON	3.9K	JA	1/4W
R6921		CARBON	3.9K	JA	1/4W
R6923		CARBON	10K	JA	1/4W
R6924		CARBON	10K	JA	1/4W
R6925		CARBON	18K	JA	1/4W
R6926		CARBON	15K	JA	1/4W
R6927		CARBON	12K	JA	1/4W
R6928		CARBON	100	JA	1/4W
R6929		CARBON	33K	JA	1/4W
(SWITCHES)					
S3101		SW,PUSH			
OR	4112 7524	SWITCH,PUSH			
S3102		SW,PUSH			
OR	4112 7524	SWITCH,PUSH			
S3103		SW,PUSH			
OR	4112 7524	SWITCH,PUSH			
S3104		SW,PUSH			
OR	4112 7524	SWITCH,PUSH			
S3105		SW,PUSH			
OR	4112 7524	SWITCH,PUSH			
S3106		SW,PUSH			
OR	4112 7524	SWITCH,PUSH			
S3107		SW,PUSH			
OR	4112 7524	SWITCH,PUSH			
S3108		SW,PUSH			
OR	4112 7524	SWITCH,PUSH			
S3117		SW,PUSH			
OR	4112 7524	SWITCH,PUSH			
S3118		SW,PUSH			
OR	4112 7524	SWITCH,PUSH			
(FUSE)					
F5001	⚠ 3151 7951	FUSE 250V 2.5A			
(PROTECTOR)					
PR511	⚠ 4375 2125	CIRCUIT PROTECTOR			

LOCATION	PARTS NO.	DESCRIPTION	
(CONNECTOR)			
CN501	⚠ 4144 8389	SOCKET,INLET	AC
(MISCELLANEOUS)			
	8681 4390	FIXER	
	8681 4988	HOLDER,FUSE,F5001	

COMPL PWB,VP-1

COMPL.NO.6913 6666

LOCATION	PARTS NO.	DESCRIPTION			
(SEMICONDUCTORS)					
Q1801	3614 4691	TR KSC2785-Y			
OR	3614 3781	TR 2SC1740S-DCTP-Q			
OR	3614 5240	TR 2SC1740S-DCTP-R			
OR	3614 4947	TR 2SC536-E-SPA-AC			
OR	3614 3969	TR 2SC536-F-SPA-AC			
Q1851	3614 4463	TR 2SC2058S-DCTP-Q			
OR	3614 4306	TR 2SC2839-E-SPA-AC			
OR	3614 4436	TR 2SC2839-F-SPA-AC			
Q1852	3614 4690	TR KSA1175-Y			
OR	3614 4942	TR 2SA608-E-SPA-AC			
OR	3614 5281	TR 2SA608-F-SPA-AC			
OR	3614 4542	TR 2SA933S-TP-Q			
OR	3614 5540	TR 2SA933S-T93-R			
(INTEGRATED CIRCUITS)					
IC181	3771 6584	IC LA7377A			
IC191	3771 6756	IC TEA5750			
(DIODES)					
D1901	3656 3655	ZENER DIODE GZS3.9X-BT			
OR	3656 3674	ZENER DIODE MTZJ3.9A-T-77			
(VARIABLE RESISTORS)					
VR182	3111 8971	SEMI VR 2.2KB			
OR	3112 9636	VR,SEMI 2.2KB			
(INDUCTORS)					
L1801	4543 2199	COIL,INDUCTOR 100UHK			
OR		HF CHOKE 100UHK			
L1802	4543 3251	COIL,INDUCTOR 68UHK			
OR		HF CHOKE 68UHK			
L1851	4543 2199	COIL,INDUCTOR 100UHK			
OR		HF CHOKE 100UHK			
L1852	4543 3251	COIL,INDUCTOR 68UHK			
OR		HF CHOKE 68UHK			
L1901	4543 1949	COIL,INDUCTOR 47UHJ			
L1902	4543 1949	COIL,INDUCTOR 47UHJ			
L1903	4543 4007	COIL,INDUCTOR 120UHJ			
(CAPACITORS)					
C1801		OS-SOLID	4.7U	M	10V
C1804		CERAMIC	0.01U	M	16V
C1805		ELECT	0.33U	M	50V
C1807		CERAMIC	470P	J	50V
C1808		CERAMIC	91P	J	50V
C1809		CERAMIC	0.01U	M	16V
C1810		CERAMIC	0.01U	M	16V
C1811		CERAMIC	0.01U	M	16V
C1812		CERAMIC	0.01U	M	16V
C1813		CERAMIC	0.033U	J	16V
C1814		CERAMIC	0.033U	J	16V
C1851		CERAMIC	390P	J	50V
C1852		CERAMIC	330P	J	50V
C1853		CERAMIC	22P	J	50V
C1856		CERAMIC	47P	J	50V
C1857		CERAMIC	82P	J	50V
C1901		CERAMIC	220P	J	50V
C1902		CERAMIC	82P	J	50V
C1903		CERAMIC	0.01U	M	16V
C1904		CERAMIC	39P	J	50V
C1905		CERAMIC	0.01U	M	16V
C1906		CERAMIC	0.01U	M	16V
C1907		CERAMIC	0.1U	Z	50V
C1908		ELECT	47U	M	6.3V
C1909		OS-SOLID	1U	M	25V

(RESISTORS)

LOCATION	PARTS NO.	DESCRIPTION			
R1801		CARBON	5.6K	JA	1/4W
R1803		CARBON	10K	JA	1/4W
R1805		CARBON	1.5K	JA	1/4W
R1807		CARBON	1K	JA	1/4W
R1808		CARBON	1.8K	JA	1/4W
R1811		CARBON	4.3K	JA	1/4W
R1813		CARBON	1K	JA	1/4W
R1814		CARBON	22K	JA	1/4W
R1815		CARBON	5.6K	JA	1/4W
R1816		CARBON	1.2K	JA	1/4W
R1851		CARBON	330	JA	1/4W
R1852		CARBON	22K	JA	1/4W
R1853		CARBON	22K	JA	1/4W
R1854		CARBON	390	JA	1/4W
R1855		CARBON	390	JA	1/4W
R1856		CARBON	2.2K	JA	1/4W
R1862		CARBON	470	JA	1/4W
R1869		CARBON	1.8K	JA	1/4W
R1901		CARBON	22K	JA	1/4W
R1902		CARBON	27K	JA	1/4W
R1903		CARBON	1K	JA	1/4W
R1904		CARBON	100	JA	1/4W
R1905		CARBON	820	JA	1/4W
R1906		CARBON	2.7K	JA	1/4W
R1907		CARBON	1M	JA	1/4W
R1908		MT-FILM	1.2K	FD	1/4W
R1909		MT-FILM	1.1K	FD	1/4W

COMPL PWB,TM-1

COMPL.NO.6913 6638

(REMOTE RECEIVERS)

LOCATION	PARTS NO.	DESCRIPTION	
RR711	6913 6685	IR RECEIVER	PACK UNIT
OR		IR RECEIVER	PACK UNIT

(DISPLAYS)

LOCATION	PARTS NO.	DESCRIPTION
A7101	3686 1162	FLUORESCENT TUBE
OR		FLUORESCENT TUBE

(MISCELLANEOUS)

LOCATION	PARTS NO.	DESCRIPTION
	8681 5261	HOLDER FL

COMPL PCB,TM-8

COMPL.NO.6913 0957 (VCR 3714VPS/S ONLY)

(INTEGRATED CIRCUIT)

LOCATION	PARTS NO.	DESCRIPTION
IC781	3771 5597	IC SDA5642(VCR 3714VPS/S ONLY)

(CAPACITORS)

LOCATION	PARTS NO.	DESCRIPTION			
C7802		CERAMIC	150P	J	50V
		(VCR 3714VPS/S ONLY)			
C7803		MT-COMPO	0.33U	J	50V
		(VCR 3714VPS/S ONLY)			
C7804		POLYESTER	0.1U	J	50V
		(VCR 3714VPS/S ONLY)			

(RESISTORS)

LOCATION	PARTS NO.	DESCRIPTION			
R7805		MT-GLAZE	2.2K	JA	1/10W
		(VCR 3714VPS/S ONLY)			
R7806		MT-GLAZE	1M	JA	1/10W
		(VCR 3714VPS/S ONLY)			
R7807		MT-GLAZE	820K	JA	1/10W
		(VCR 3714VPS/S ONLY)			
R7808		MT-GLAZE	100K	JA	1/10W
		(VCR 3714VPS/S ONLY)			
R7809		MT-GLAZE	10K	JA	1/10W
		(VCR 3714VPS/S ONLY)			
R7810		MT-GLAZE	1.2M	JA	1/10W
		(VCR 3714VPS/S ONLY)			
R7811		MT-GLAZE	100	JA	1/10W
		(VCR 3714VPS/S ONLY)			
R7812		MT-GLAZE	5.6K	JA	1/10W
		(VCR 3714VPS/S ONLY)			

COMPL PWB,TB-1

COMPL.NO.6913 6652

(SEMICONDUCTORS)

LOCATION	PARTS NO.	DESCRIPTION
Q8901	3614 4690	TR KSA1175-Y
OR	3614 4942	TR 2SA608-E-SPA-AC
OR	3614 5281	TR 2SA608-F-SPA-AC
OR	3614 4542	TR 2SA933S-TP-Q
OR	3614 5540	TR 2SA933S-T93-R
Q8902	3614 4690	TR KSA1175-Y
OR	3614 4942	TR 2SA608-E-SPA-AC
OR	3614 5281	TR 2SA608-F-SPA-AC
OR	3614 4542	TR 2SA933S-TP-Q
OR	3614 5540	TR 2SA933S-T93-R
Q8906	3614 5227	TR DTC144ES-DCTP
OR	3614 5279	TR 2SC3399-AC
Q8907	3614 5227	TR DTC144ES-DCTP
OR	3614 5279	TR 2SC3399-AC
Q8908	3614 4690	TR KSA1175-Y
OR	3614 4942	TR 2SA608-E-SPA-AC
OR	3614 5281	TR 2SA608-F-SPA-AC
OR	3614 4542	TR 2SA933S-TP-Q
OR	3614 5540	TR 2SA933S-T93-R

(INTEGRATED CIRCUITS)

LOCATION	PARTS NO.	DESCRIPTION
IC881	3771 6592	IC TC4053BF
IC882	3771 6592	IC TC4053BF
IC891	3771 6532	IC BA7630S

(DIODES)

LOCATION	PARTS NO.	DESCRIPTION
D8601	3656 3392	ZENER DIODE GZS5.6X-BT
OR	3656 3130	ZENER DIODE MTZJ5.6B-T-77
D8602	3656 3392	ZENER DIODE GZS5.6X-BT
OR	3656 3130	ZENER DIODE MTZJ5.6B-T-77
D8603	3656 3575	ZENER DIODE MTZJ15B-T-77
D8901	3656 3392	ZENER DIODE GZS5.6X-BT
OR	3656 3130	ZENER DIODE MTZJ5.6B-T-77
D8902	3656 3392	ZENER DIODE GZS5.6X-BT
OR	3656 3130	ZENER DIODE MTZJ5.6B-T-77
D8903	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D8904	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D8905	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D8906	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77
D8910	3656 2770	DIODE GMA01-BT
OR	3656 2230	DIODE 1SS133-T-77

(CAPACITORS)

LOCATION	PARTS NO.	DESCRIPTION			
C8551		CERAMIC	6800P	K	50V
C8552		CERAMIC	1000P	K	50V
C8554		CERAMIC	1000P	K	50V
C8821		ELECT	47U	M	16V
C8829		ELECT	4.7U	M	25V
C8901		NP-ELECT	0.47U	M	50V
C8902		CERAMIC	0.01U	Z	50V
C8903		ELECT	47U	M	6.3V
C8904		NP-ELECT	0.47U	M	50V
C8905		CERAMIC	27P	J	50V
C8906		ELECT	1U	M	50V
C8907		ELECT	1U	M	50V
C8908		ELECT	470U	M	6.3V
C8909		ELECT	47U	M	16V
C8910		CERAMIC	0.01U	Z	50V

(RESISTORS)

LOCATION	PARTS NO.	DESCRIPTION			
R8507		MT-GLAZE	2.7K	JA	1/10W
R8508		MT-GLAZE	2.7K	JA	1/10W
R8547		MT-GLAZE	2.7K	JA	1/10W
R8548		MT-GLAZE	2.7K	JA	1/10W
R8553		MT-GLAZE	560	JA	1/10W
R8556		MT-GLAZE	560	JA	1/10W
R8601		MT-GLAZE	75	JA	1/10W
R8602		MT-GLAZE	75	JA	1/10W
R8603		MT-GLAZE	1K	JA	1/10W
R8604		MT-GLAZE	1K	JA	1/10W

LOCATION	PARTS NO.	DESCRIPTION			
R8620		MT-GLAZE	13K	JA	1/10W
R8621		MT-GLAZE	9.1K	JA	1/10W
R8803		MT-GLAZE	9.1K	JA	1/10W
R8821		MT-GLAZE	4.7K	JA	1/10W
R8822		MT-GLAZE	4.7K	JA	1/10W
R8823		MT-GLAZE	4.7K	JA	1/10W
R8824		MT-GLAZE	4.7K	JA	1/10W
R8825		MT-GLAZE	1K	JA	1/10W
R8826		MT-GLAZE	1K	JA	1/10W
R8827		MT-GLAZE	1K	JA	1/10W
R8828		MT-GLAZE	1K	JA	1/10W
R8829		MT-GLAZE	10K	JA	1/10W
R8830		MT-GLAZE	2.7K	JA	1/10W
R8851		MT-GLAZE	510	JA	1/10W
R8852		MT-GLAZE	820	JA	1/10W
R8853		MT-GLAZE	1K	JA	1/10W
R8901		MT-GLAZE	100	JA	1/10W
R8902		MT-GLAZE	100	JA	1/10W
R8910		CARBON	820	JA	1/4W
R8911		CARBON	820	JA	1/4W
R8912		MT-GLAZE	33	JA	1/10W
R8913		MT-GLAZE	39	JA	1/10W
R8914		CARBON	820	JA	1/4W
R8915		CARBON	820	JA	1/4W
R8916		MT-GLAZE	33	JA	1/10W
R8917		MT-GLAZE	39	JA	1/10W
R8918		MT-GLAZE	47K	JA	1/10W
R8919		MT-GLAZE	2.2K	JA	1/10W
R8920		MT-GLAZE	4.7K	JA	1/10W
R8921		MT-GLAZE	4.7K	JA	1/10W
R8922		MT-GLAZE	1.2K	JA	1/10W

LOCATION	PARTS NO.	DESCRIPTION
(CONNECTORS)		
CN871		SOCKET,21P
CN872		SOCKET,21P

COMPL,MC-1

COMPL.NO. 6913 1133

LOCATION	PARTS NO.	DESCRIPTION			
(DIODE)					
D8001	3683 1088	PHOTO COUPLE SPI-315-04-C			
OR	3683 1102	PHOTO DIODE ON2170-R			
(RESISTOR)					
R8001		CARBON	270	JA	1/4W
OR		CARBON	270	JA	1/6W
R8002		CARBON	100	JA	1/4W
OR		CARBON	100	JA	1/6W
(SWITCH)					
S8001	4112 9704	SPECIAL SWITCH			

FLEXIBLE FLAT CABLE

LOCATION	PARTS NO.	DESCRIPTION
	4131 4293	FLEXIBLE FLAT CABLES,SCN303-CN811
	4131 4296	FLEXIBLE FLAT CABLES,SCN101-CN181

VCR 3714 VPS/SV
VCR 3714 SV

BLOCK DIAGRAMS,CIRCUIT DIAGRAMS & PRINTED WIRING BOARDS

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6611 74 44

NOTES:

1. All resistance values in "OHMS" unless otherwise noted.
   (K=1,000 M=1,000,000)
2. All capacitance values in "µfd" unless otherwise noted.
   p=pico farad
3. All inductance values in "mH"unless otherwise noted.
   µ=micro henry.

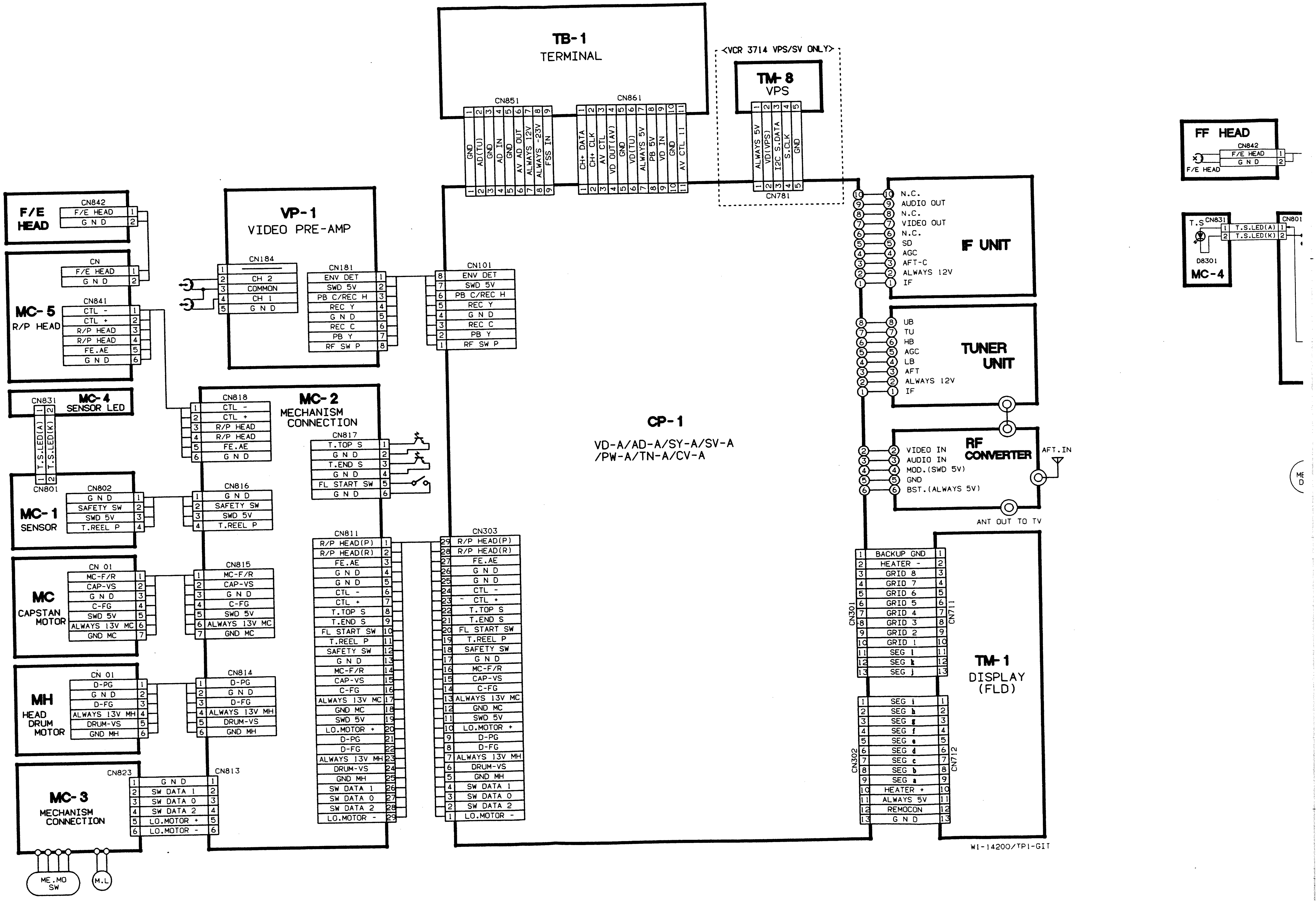
PRODUCT SAFETY NOTICE

THE COMPONENTS DESIGNATED BY A SYMBOL (⚠) IN THIS SCHEMATIC DIAGRAM DESIGNATES COMPONENTS WHOSE VALUE ARE OF SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. SHOULD ANY COMPONENT DESIGNATED BY A SYMBOL NEED TO BE REPLACED, USE ONLY THE PART DESIGNATED IN THE PARTS LIST. DO NOT DEVIATE FROM THE RESISTANCE, WATTAGE AND VOLTAGE RATINGS SHOWN.

PAL_A

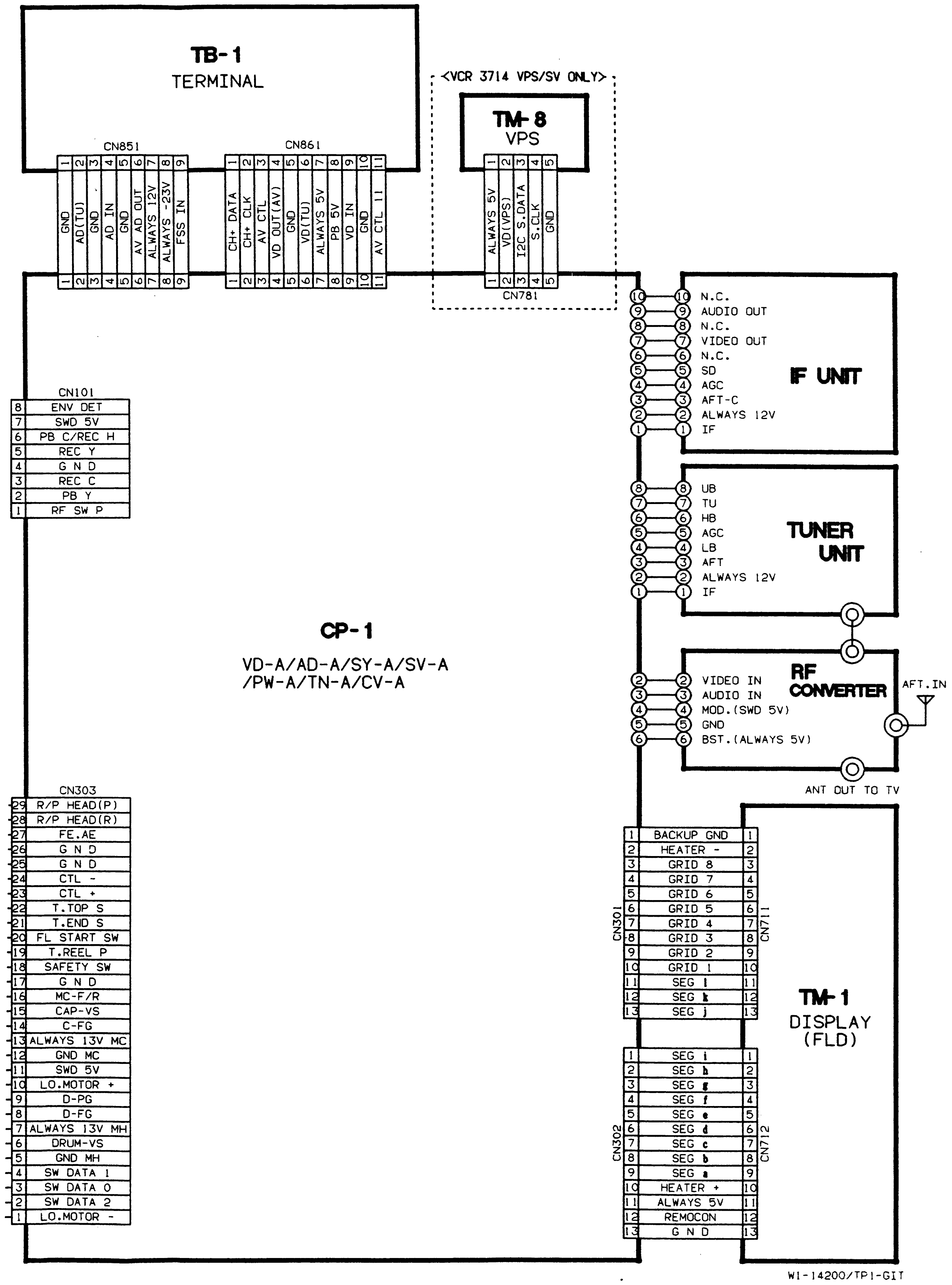
1. OVERALL WIRING, MECHANISM CONNECTION, & BLOCK DIAGRAMS

1-1. OVERALL WIRING



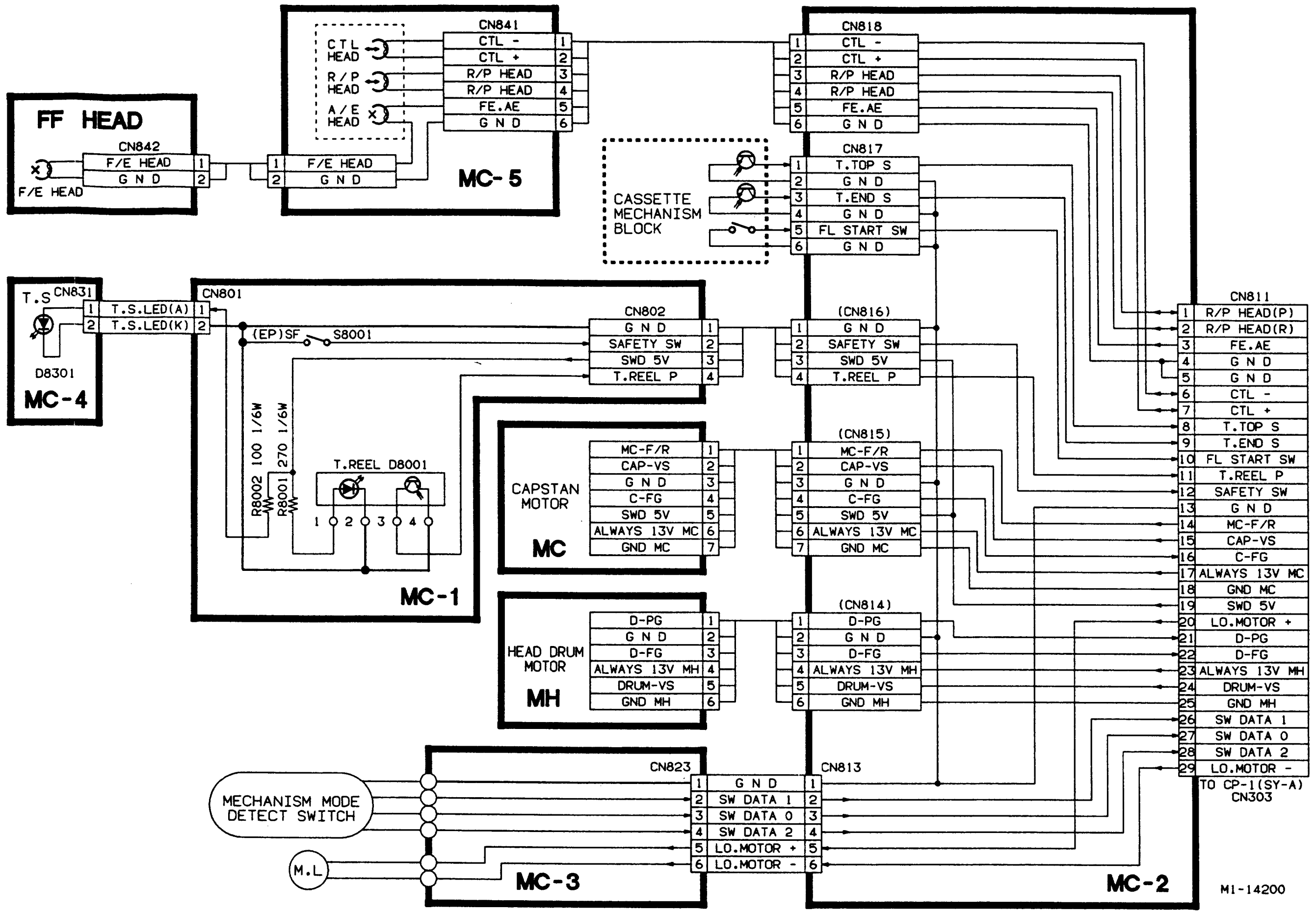
TB-1
TERMINAL
CN851
GND
AD(TU)
GND
AD IN
GND
AV AD OUT
ALWAYS 12V
ALWAYS -23V
FSS IN
CN861
CH+ DATA
CH+ CLK
AV CTL
VD OUT(AV)
GND
VD(TU)
ALWAYS 5V
PB 5V
VD IN
GND
AV CTL II
<VCR 3714 VPS/SV ONLY>
TM-8
VPS
ALWAYS 5V
VD(VPS)
I2C S.DATA
S.CLK
GND
CN781
FF HEAD
CN842
F/E HEAD
G N D
F/E HEAD
T.S
CN831
T.S.LED(A)
T.S.LED(K)
D8301
MC-4
CN801
F/E HEAD
CN842
F/E HEAD
G N D
MC-5
R/P HEAD
CN
F/E HEAD
G N D
CN841
CTL -
CTL +
R/P HEAD
R/P HEAD
FE.AE
G N D
MC-4
SENSOR LED
CN831
T.S.LED(A)
T.S.LED(K)
CN801
MC-1
SENSOR
CN802
G N D
SAFETY SW
SWD 5V
T.REEL P
MC
CAPSTAN MOTOR
CN 01
MC-F/R
CAP-VS
G N D
C-FG
SWD 5V
ALWAYS 13V MC
GND MC
MH
HEAD DRUM MOTOR
CN 01
D-PG
G N D
D-FG
ALWAYS 13V MH
DRUM-VS
GND MH
MC-3
MECHANISM CONNECTION
CN823
G N D
SW DATA 1
SW DATA 0
SW DATA 2
LO.MOTOR +
LO.MOTOR -
ME.MO SW
M.L
VP-1
VIDEO PRE-AMP
CN184
CH 2
COMMON
CH 1
G N D
CN181
ENV DET
SWD 5V
PB C/REC H
REC Y
G N D
REC C
PB Y
RF SW P
MC-2
MECHANISM CONNECTION
CN818
CTL -
CTL +
R/P HEAD
R/P HEAD
FE.AE
G N D
CN817
T.TOP S
G N D
T.END S
G N D
FL START SW
G N D
CN816
G N D
SAFETY SW
SWD 5V
T.REEL P
CN815
MC-F/R
CAP-VS
G N D
C-FG
SWD 5V
ALWAYS 13V MC
GND MC
CN814
D-PG
G N D
D-FG
ALWAYS 13V MH
DRUM-VS
GND MH
CN813
CN811
R/P HEAD(P)
R/P HEAD(R)
FE.AE
G N D
G N D
CTL -
CTL +
T.TOP S
T.END S
FL START SW
T.REEL P
SAFETY SW
G N D
MC-F/R
CAP-VS
C-FG
ALWAYS 13V MC
GND MC
SWD 5V
LO.MOTOR +
D-PG
D-FG
ALWAYS 13V MH
DRUM-VS
GND MH
SW DATA 1
SW DATA 0
SW DATA 2
LO.MOTOR -
CN101
ENV DET
SWD 5V
PB C/REC H
REC Y
G N D
REC C
PB Y
RF SW P
CN303
CP-1
VD-A/AD-A/SY-A/SV-A
/PW-A/TN-A/CV-A
IF UNIT
N.C.
AUDIO OUT
N.C.
VIDEO OUT
N.C.
SD
AGC
AFT-C
ALWAYS 12V
IF
TUNER UNIT
UB
TU
HB
AGC
LB
AFT
ALWAYS 12V
IF
RF CONVERTER
VIDEO IN
AUDIO IN
MOD.(SWD 5V)
GND
BST.(ALWAYS 5V)
AFT.IN
ANT OUT TO TV
CN301
CN711
BACKUP GND
HEATER -
GRID 8
GRID 7
GRID 6
GRID 5
GRID 4
GRID 3
GRID 2
GRID 1
SEG l
SEG k
SEG j
CN302
CN712
SEG i
SEG h
SEG g
SEG f
SEG e
SEG d
SEG c
SEG b
SEG a
HEATER +
ALWAYS 5V
REMOCON
G N D
TM-1
DISPLAY (FLD)
WI-14200/TP1-GIT
K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

1-1. OVERALL WIRING



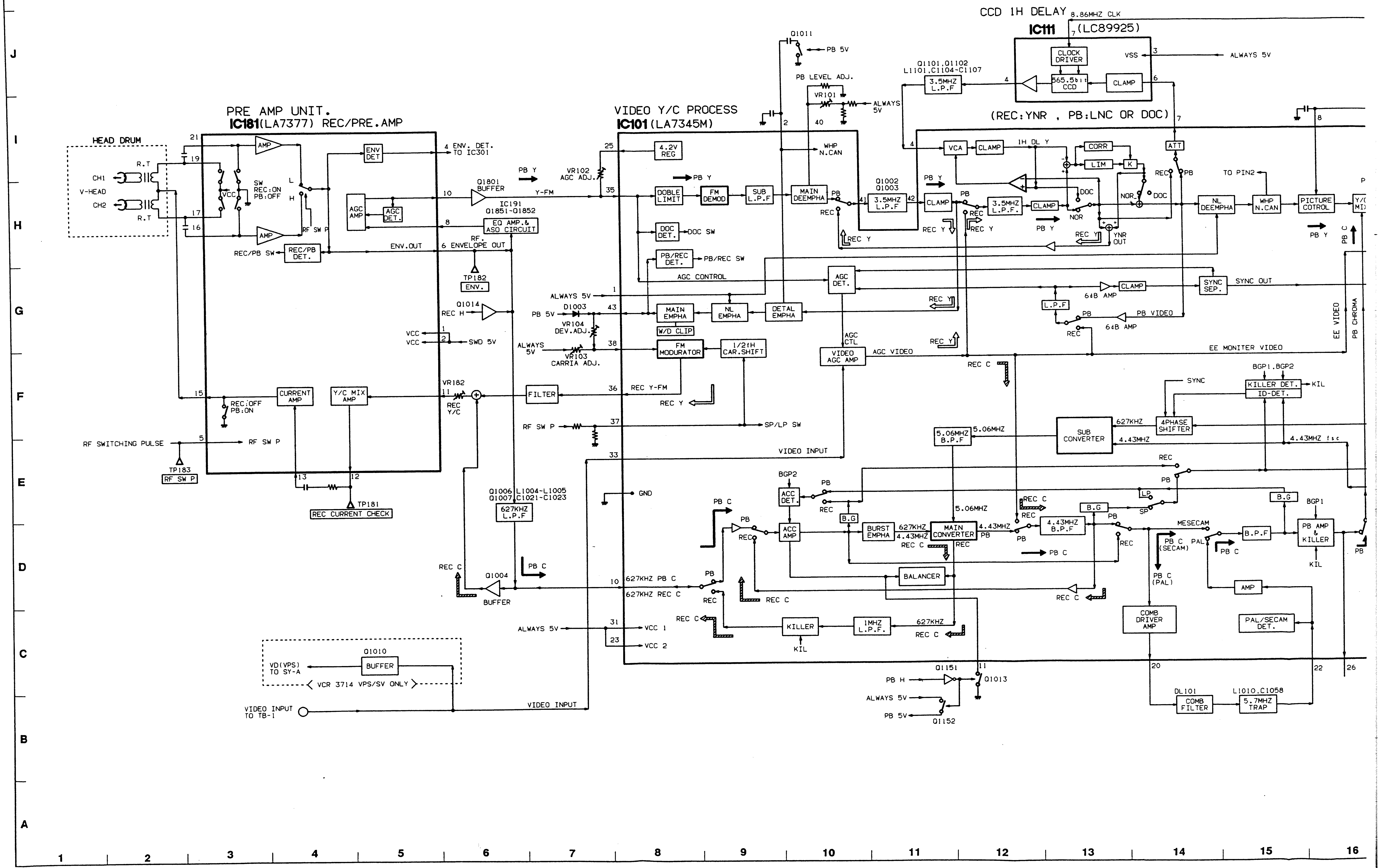
TB-1
TERMINAL
CN851
GND
AD(TU)
GND
AD IN
GND
AV AD OUT
ALWAYS 12V
ALWAYS -23V
FSS IN
CN861
CH+ DATA
CH+ CLK
AV CTL
VD OUT(AV)
GND
VD(TU)
ALWAYS 5V
PB 5V
VD IN
GND
AV CTL 11
<VCR 3714 VPS/SV ONLY>
TM-8
VPS
ALWAYS 5V
VD(VPS)
I2C S.DATA
S.CLK
GND
CN781
N.C.
AUDIO OUT
N.C.
VIDEO OUT
N.C.
SD
AGC
AFT-C
ALWAYS 12V
IF
IF UNIT
UB
TU
HB
AGC
LB
AFT
ALWAYS 12V
IF
TUNER UNIT
VIDEO IN
AUDIO IN
MOD.(SWD 5V)
GND
BST.(ALWAYS 5V)
RF CONVERTER
AFT.IN
ANT OUT TO TV
CN101
8 ENV DET
7 SWD 5V
6 PB C/REC H
5 REC Y
4 G N D
3 REC C
2 PB Y
1 RF SW P
CP-1
VD-A/AD-A/SY-A/SV-A
/PW-A/TN-A/CV-A
CN303
29 R/P HEAD(P)
28 R/P HEAD(R)
27 FE.AE
26 G N D
25 G N D
24 CTL -
23 CTL +
22 T.TOP S
21 T.END S
20 FL START SW
19 T.REEL P
18 SAFETY SW
17 G N D
16 MC-F/R
15 CAP-VS
14 C-FG
13 ALWAYS 13V MC
12 GND MC
11 SWD 5V
10 LO.MOTOR +
9 D-PG
8 D-FG
7 ALWAYS 13V MH
6 DRUM-VS
5 GND MH
4 SW DATA 1
3 SW DATA 0
2 SW DATA 2
1 LO.MOTOR -
CN301
CN711
1 BACKUP GND
2 HEATER -
3 GRID 8
4 GRID 7
5 GRID 6
6 GRID 5
7 GRID 4
8 GRID 3
9 GRID 2
10 GRID 1
11 SEG l
12 SEG k
13 SEG j
CN302
CN712
1 SEG i
2 SEG h
3 SEG g
4 SEG f
5 SEG e
6 SEG d
7 SEG c
8 SEG b
9 SEG a
10 HEATER +
11 ALWAYS 5V
12 REMOCON
13 G N D
TM-1
DISPLAY
(FLD)
WI-14200/TP1-GIT

1-2. MECHANISM CONNECTION

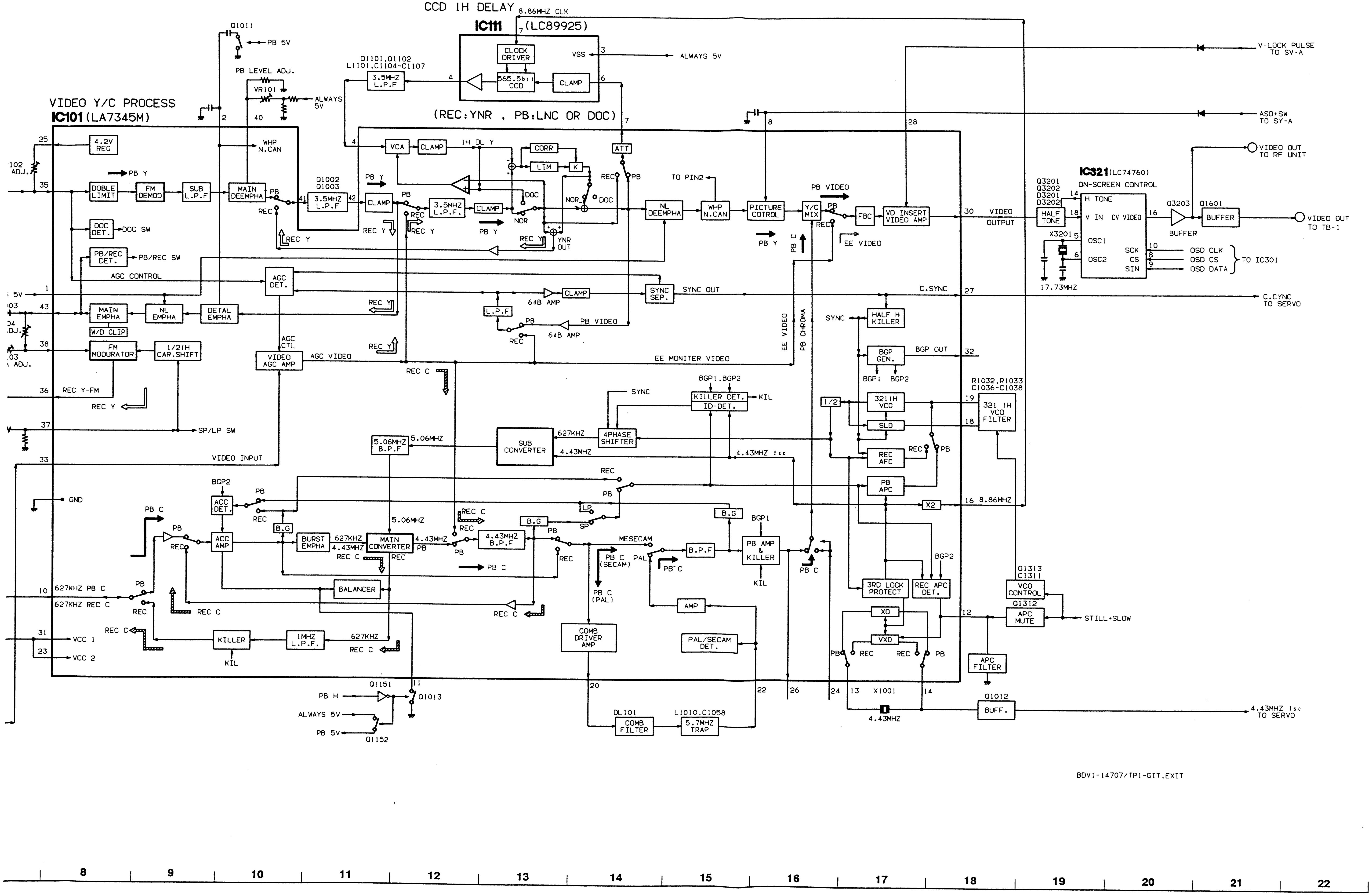


FF HEAD
CN842
F/E HEAD
G N D
F/E HEAD
CTL HEAD
R/P HEAD
A/E HEAD
CN841
CTL -
CTL +
R/P HEAD
R/P HEAD
FE.AE
G N D
F/E HEAD
G N D
MC-5
CASSETTE MECHANISM BLOCK
CN818
CTL -
CTL +
R/P HEAD
R/P HEAD
FE.AE
G N D
CN817
T.TOP S
G N D
T.END S
G N D
FL START SW
G N D
T.S
CN831
T.S.LED(A)
T.S.LED(K)
D8301
MC-4
CN801
(EP)SF
S8001
CN802
G N D
SAFETY SW
SWD 5V
T.REEL P
R8002 100 1/6W
R8001 270 1/6W
T.REEL D8001
MC-1
(CN816)
G N D
SAFETY SW
SWD 5V
T.REEL P
CAPSTAN MOTOR
MC
MC-F/R
CAP-VS
G N D
C-FG
SWD 5V
ALWAYS 13V MC
GND MC
(CN815)
MC-F/R
CAP-VS
G N D
C-FG
SWD 5V
ALWAYS 13V MC
GND MC
HEAD DRUM MOTOR
MH
D-PG
G N D
D-FG
ALWAYS 13V MH
DRUM-VS
GND MH
(CN814)
D-PG
G N D
D-FG
ALWAYS 13V MH
DRUM-VS
GND MH
CN811
1 R/P HEAD(P)
2 R/P HEAD(R)
3 FE.AE
4 G N D
5 G N D
6 CTL -
7 CTL +
8 T.TOP S
9 T.END S
10 FL START SW
11 T.REEL P
12 SAFETY SW
13 G N D
14 MC-F/R
15 CAP-VS
16 C-FG
17 ALWAYS 13V MC
18 GND MC
19 SWD 5V
20 LO.MOTOR +
21 D-PG
22 D-FG
23 ALWAYS 13V MH
24 DRUM-VS
25 GND MH
26 SW DATA 1
27 SW DATA 0
28 SW DATA 2
29 LO.MOTOR -
TO CP-1(SY-A) CN303
MECHANISM MODE DETECT SWITCH
M.L
CN823
G N D
SW DATA 1
SW DATA 0
SW DATA 2
LO.MOTOR +
LO.MOTOR -
CN813
MC-3
MC-2
MI-14200

1-3. VIDEO CIRCUIT


CCD 1H DELAY
IC111 (LC89925)
8.86MHZ CLK
CLOCK DRIVER
565.5bit CCD
CLAMP
VSS
ALWAYS 5V
(REC:YNR , PB:LNC OR DOC)
Q1011
PB 5V
PB LEVEL ADJ.
VR101
ALWAYS 5V
Q1101,Q1102
L1101,C1104-C1107
3.5MHZ L.P.F
PRE AMP UNIT.
IC181(LA7377) REC/PRE.AMP
HEAD DRUM
CH1
V-HEAD
CH2
R.T
AMP
ENV DET
4 ENV. DET. TO IC301
SW REC:ON PB:OFF
VCC
AGC AMP
AGC DET.
RF SW P
REC/PB SW
REC/PB DET.
ENV.OUT
6 ENVELOPE OUT
RF.
TP182 ENV.
Q1801 BUFFER
Y-FM
PB Y
IC191 Q1851-Q1852
EQ AMP.& ASO CIRCUIT
VR102 AGC ADJ.
VIDEO Y/C PROCESS
IC101(LA7345M)
4.2V REG
DOBLE LIMIT
FM DEMOD
SUB L.P.F
MAIN DEEMPHA
WHP N.CAN
DOC DET.
DOC SW
PB/REC DET.
PB/REC SW
AGC CONTROL
AGC DET.
Q1002 Q1003
3.5MHZ L.P.F
CLAMP
VCA
1H DL Y
CORR
LIM
K
ATT
NOR
DOC
YNR OUT
TO PIN2
NL DEEMPHA
PICTURE COTROL
REC Y
SYNC SEP.
SYNC OUT
6dB AMP
L.P.F
PB VIDEO
EE MONITER VIDEO
EE VIDEO
PB CHROMA
ALWAYS 5V
Q1014
REC H
PB 5V
D1003
VR104 DEV.ADJ.
MAIN EMPHA
W/D CLIP
NL EMPHA
DETAL EMPHA
VR103 CARRIA ADJ.
FM MODURATOR
1/2fH CAR.SHIFT
VCC
SWD 5V
AGC CTL
VIDEO AGC AMP
AGC VIDEO
REC C
CURRENT AMP
Y/C MIX AMP
REC:OFF PB:ON
VR182
REC Y/C
FILTER
REC Y-FM
RF SW P
SP/LP SW
RF SWITCHING PULSE
TP183 RF SW P
VIDEO INPUT
TP181 REC CURRENT CHECK
GND
Q1006 L1004-L1005
Q1007 C1021-C1023
627KHZ L.P.F
PB C
Q1004 BUFFER
627KHZ PB C
627KHZ REC C
BGP2
ACC DET.
ACC AMP
B.G
BURST EMPHA
627KHZ
4.43MHZ
MAIN CONVERTER
5.06MHZ B.P.F
5.06MHZ
SUB CONVERTER
627KHZ
4.43MHZ
4PHASE SHIFTER
BGP1.BGP2
KILLER DET.
ID-DET.
KIL
SYNC
4.43MHZ fsc
4.43MHZ B.P.F
LP
SP
MESECAM
PB C (SECAM)
PAL
PB C (PAL)
B.P.F
PB AMP & KILLER
BGP1
BALANCER
KILLER
1MHZ L.P.F.
AMP
COMB DRIVER AMP
PAL/SECAM DET.
ALWAYS 5V
VCC 1
VCC 2
Q1010
BUFFER
VD(VPS) TO SY-A
VCR 3714 VPS/SV ONLY
VIDEO INPUT TO TB-1
Q1151
PB H
Q1013
ALWAYS 5V
PB 5V
Q1152
DL101
COMB FILTER
L1010,C1058
5.7MHZ TRAP
REC
PB
K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

1-3. VIDEO CIRCUIT



CCD 1H DELAY
8.86MHZ CLK
IC111 (LC89925)
CLOCK DRIVER
VSS
ALWAYS 5V
565.5bit CCD
CLAMP
(REC:YNR , PB:LNC OR DOC)
Q1101,Q1102
L1101,C1104-C1107
3.5MHZ L.P.F
Q1011
PB 5V
PB LEVEL ADJ.
VR101
ALWAYS 5V
VIDEO Y/C PROCESS
IC101 (LA7345M)
4.2V REG
WHP N.CAN
PB Y
DOBLE LIMIT
FM DEMOD
SUB L.P.F
MAIN DEEMPHA
Q1002
Q1003
3.5MHZ L.P.F
CLAMP
VCA
CLAMP
1H DL Y
CORR
LIM
K
DOC
NOR
YNR OUT
ATT
TO PIN2
NL DEEMPHA
WHP N.CAN
PICTURE COTROL
Y/C MIX
PB VIDEO
FBC
VD INSERT VIDEO AMP
EE VIDEO
PB Y
PB C
REC Y
DOC DET.
DOC SW
PB/REC DET.
PB/REC SW
AGC CONTROL
AGC DET.
SYNC SEP.
SYNC OUT
C.SYNC
6dB AMP
L.P.F
PB VIDEO
MAIN EMPHA
NL EMPHA
DETAL EMPHA
W/D CLIP
FM MODURATOR
1/2fH CAR.SHIFT
AGC CTL
VIDEO AGC AMP
AGC VIDEO
EE MONITER VIDEO
EE VIDEO
PB CHROMA
REC Y-FM
SP/LP SW
VIDEO INPUT
REC C
SYNC
HALF H KILLER
BGP GEN.
BGP OUT
BGP1
BGP2
KILLER DET.
ID-DET.
KIL
1/2
321fH VCO
SLD
REC AFC
PB APC
X2
4PHASE SHIFTER
627KHZ
4.43MHZ
SUB CONVERTER
5.06MHZ B.P.F
5.06MHZ
4.43MHZ fsc
GND
ACC DET.
B.G
ACC AMP
BURST EMPHA
MAIN CONVERTER
4.43MHZ B.P.F
LP
SP
MESECAM
PB C (SECAM)
PB C (PAL)
PAL
B.P.F
PB AMP & KILLER
AMP
PAL/SECAM DET.
COMB DRIVER AMP
BALANCER
3RD LOCK PROTECT
REC APC DET.
XO
VXO
627KHZ PB C
627KHZ REC C
VCC 1
VCC 2
KILLER
1MHZ L.P.F.
Q1151
Q1013
PB H
ALWAYS 5V
PB 5V
Q1152
DL101
COMB FILTER
L1010,C1058
5.7MHZ TRAP
X1001
4.43MHZ
APC FILTER
Q1012
BUFF.
4.43MHZ fsc TO SERVO
IC321 (LC74760)
ON-SCREEN CONTROL
Q3201
Q3202
D3201
D3202
HALF TONE
H TONE
V IN
CV VIDEO
OSC1
OSC2
X3201
17.73MHZ
SCK
CS
SIN
OSD CLK
OSD CS
OSD DATA
TO IC301
Q3203
BUFFER
Q1601
VIDEO OUTPUT
VIDEO OUT TO RF UNIT
VIDEO OUT TO TB-1
V-LOCK PULSE TO SV-A
ASO+SW TO SY-A
C.CYNC TO SERVO
R1032,R1033
C1036-C1038
321 fH VCO FILTER
8.86MHZ
Q1313
C1311
VCO CONTROL
Q1312
APC MUTE
STILL+SLOW
BDV1-14707/TP1-GIT.EXIT
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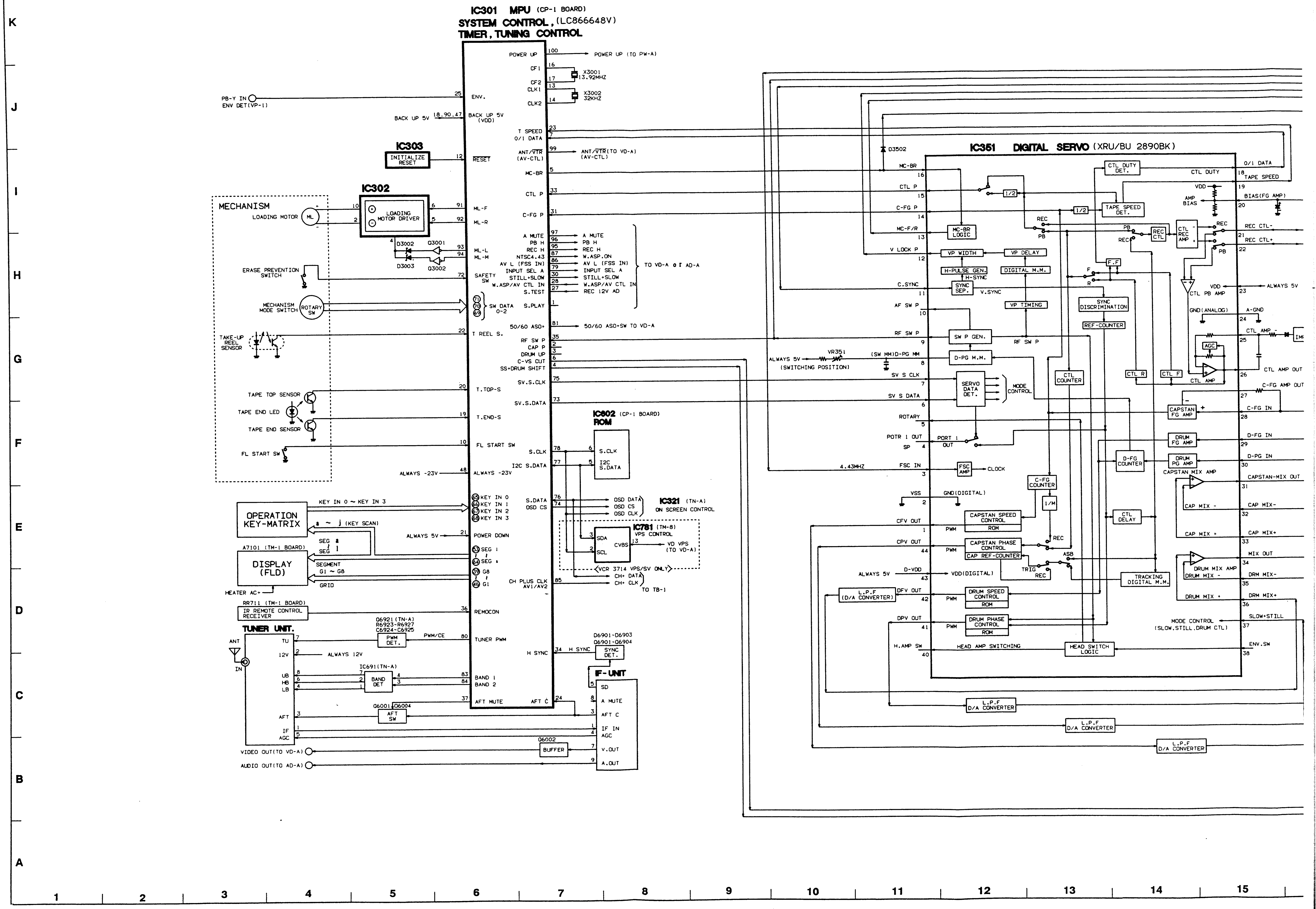
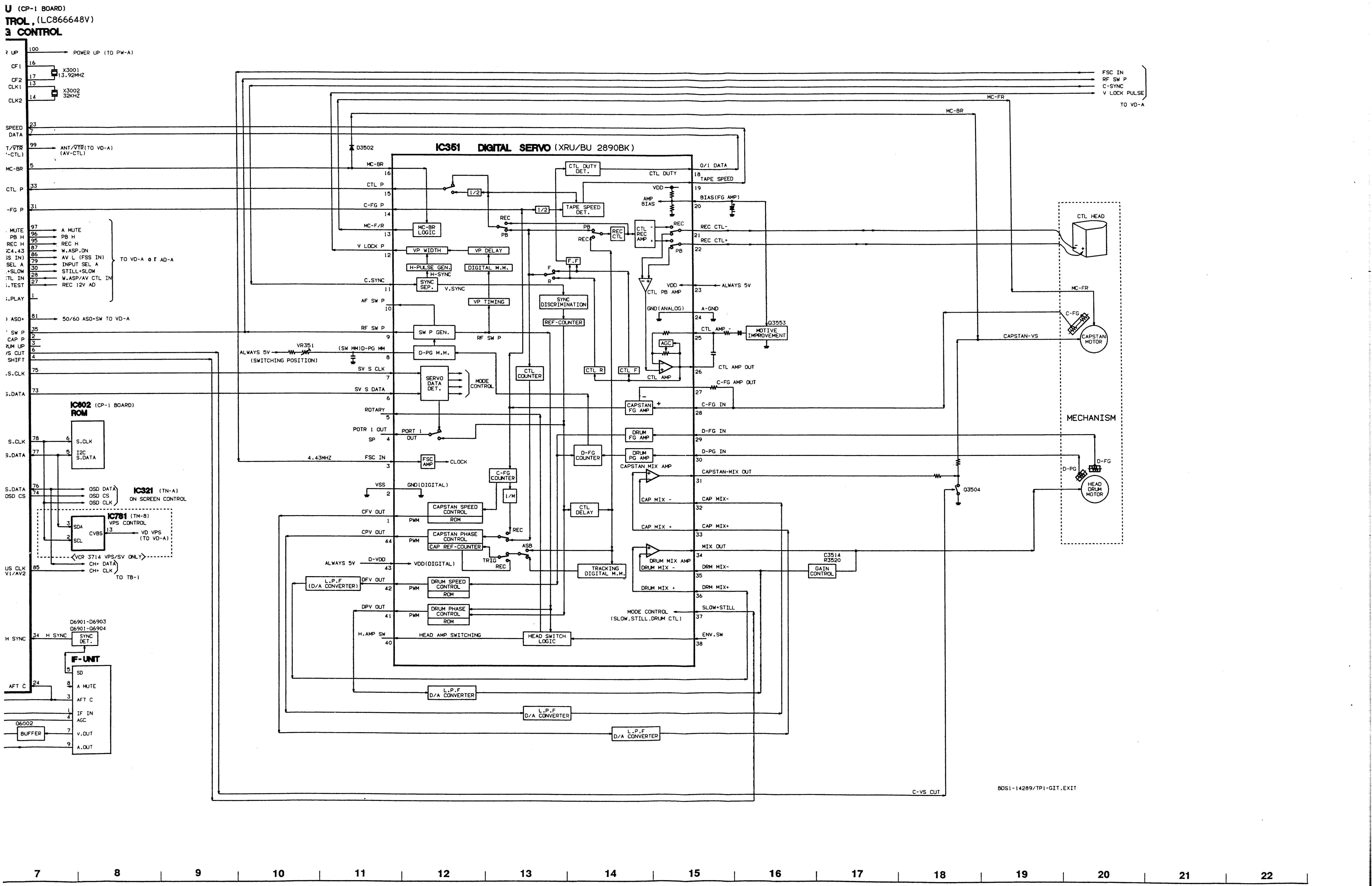
1-4. SYSTEM CONTROL & SERVO CIRCUIT


IC301 MPU (CP-1 BOARD)
SYSTEM CONTROL, (LC866648V)
TIMER, TUNING CONTROL
POWER UP
POWER UP (TO PW-A)
CF1
CF2
CLK1
CLK2
X3001 13.92MHZ
X3002 32KHZ
PB-Y IN
ENV DET(VP-1)
ENV.
BACK UP 5V
BACK UP 5V (VDD)
T SPEED
0/1 DATA
ANT/VTR (AV-CTL)
ANT/VTR(TO VD-A) (AV-CTL)
IC303
INITIALIZE RESET
RESET
MC-BR
CTL P
C-FG P
IC302
LOADING MOTOR DRIVER
MECHANISM
LOADING MOTOR
ML-F
ML-R
ML-L
ML-M
D3002
D3003
Q3001
Q3002
A MUTE
PB H
REC H
NTSC4.43
AV L (FSS IN)
INPUT SEL A
STILL+SLOW
W.ASP/AV CTL IN
S.TEST
W.ASP.ON
REC 12V AD
TO VD-A or AD-A
ERASE PREVENTION SWITCH
SAFETY SW
MECHANISM MODE SWITCH
ROTARY SW
SW DATA 0-2
S.PLAY
50/60 ASO+
50/60 ASO+SW TO VD-A
TAKE-UP REEL SENSOR
T REEL S.
RF SW P
CAP P
DRUM UP
C-VS CUT
SS+DRUM SHIFT
SV.S.CLK
SV.S.DATA
TAPE TOP SENSOR
TAPE END LED
TAPE END SENSOR
T.TOP-S
T.END-S
FL START SW
IC602 (CP-1 BOARD) ROM
S.CLK
I2C S.DATA
ALWAYS -23V
OPERATION KEY-MATRIX
KEY IN 0 ~ KEY IN 3
a ~ j (KEY SCAN)
S.DATA
OSD CS
OSD DATA
OSD CLK
IC321 (TN-A) ON SCREEN CONTROL
IC781 (TM-8) VPS CONTROL
SDA
SCL
CVBS
VD VPS (TO VD-A)
VCR 3714 VPS/SV ONLY
ALWAYS 5V
POWER DOWN
A7101 (TM-1 BOARD)
DISPLAY (FLD)
SEG a
SEG l
SEGMENT
G1 ~ G8
GRID
HEATER AC+
CH PLUS CLK AV1/AV2
CH+ DATA
CH+ CLK
TO TB-1
RR711 (TM-1 BOARD)
IR REMOTE CONTROL RECEIVER
REMOCON
TUNER UNIT.
ANT IN
TU
12V
ALWAYS 12V
Q6921 (TN-A)
R6923-R6927
C6924-C6925
PWM DET.
PWM/CE
TUNER PWM
D6901-D6903
Q6901-Q6904
H SYNC
SYNC DET.
IC691 (TN-A)
BAND DET
UB
HB
LB
BAND 1
BAND 2
AFT MUTE
AFT C
Q6001, Q6004
AFT SW
AFT
IF AGC
IF-UNIT
SD
A MUTE
AFT C
IF IN AGC
V.OUT
A.OUT
Q6002
BUFFER
VIDEO OUT(TO VD-A)
AUDIO OUT(TO AD-A)
D3502
IC351 DIGITAL SERVO (XRU/BU 2890BK)
MC-BR
CTL P
C-FG P
MC-F/R
V LOCK P
C.SYNC
AF SW P
RF SW P
ALWAYS 5V
VR351
(SWITCHING POSITION)
(SW MM)D-PG MM
SV S CLK
SV S DATA
ROTARY
POTR 1 OUT
SP
4.43MHZ
FSC IN
VSS
CFV OUT
CPV OUT
D-VDD
DFV OUT
DPV OUT
H.AMP SW
MC-BR LOGIC
1/2
VP WIDTH
VP DELAY
H-PULSE GEN.
DIGITAL M.M.
H-SYNC
SYNC SEP.
V.SYNC
VP TIMING
SW P GEN.
RF SW P
D-PG M.M.
SERVO DATA DET.
MODE CONTROL
PORT 1 OUT
FSC AMP
CLOCK
GND(DIGITAL)
CAPSTAN SPEED CONTROL
ROM
PWM
CAPSTAN PHASE CONTROL
CAP REF-COUNTER
VDD(DIGITAL)
DRUM SPEED CONTROL
DRUM PHASE CONTROL
HEAD AMP SWITCHING
L.P.F (D/A CONVERTER)
CTL DUTY DET.
TAPE SPEED DET.
REC
PB
F.F
F
R
SYNC DISCRIMINATION
REF-COUNTER
CTL COUNTER
C-FG COUNTER
1/M
TRIG
ASB
CTL DELAY
D-FG COUNTER
TRACKING DIGITAL M.M.
HEAD SWITCH LOGIC
CTL R
CTL F
CTL REC AMP
REC CTL
CTL PB AMP
CTL AMP
AGC
CAPSTAN FG AMP
DRUM FG AMP
DRUM PG AMP
CAPSTAN MIX AMP
CAP MIX -
CAP MIX +
DRUM MIX AMP
DRUM MIX -
DRUM MIX +
MODE CONTROL (SLOW.STILL.DRUM CTL)
CTL DUTY
VDD
AMP BIAS
0/1 DATA
TAPE SPEED
BIAS(FG AMP)
REC CTL-
REC CTL+
ALWAYS 5V
VDD
GND(ANALOG)
A-GND
CTL AMP -
CTL AMP OUT
C-FG AMP OUT
C-FG IN
D-FG IN
D-PG IN
CAPSTAN-MIX OUT
CAP MIX-
CAP MIX+
MIX OUT
DRM MIX-
DRM MIX+
SLOW+STILL
ENV.SW
K J I H G F E D C B A
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

1-4. SYSTEM CONTROL & SERVO CIRCUIT


U (CP-1 BOARD)
TROL, (LC866648V)
3 CONTROL
POWER UP (TO PW-A)
X3001 13.92MHZ
X3002 32KHZ
CF1
CF2
CLK1
CLK2
SPEED
DATA
ANT/VTR (TO VD-A) (AV-CTL)
MC-BR
CTL P
-FG P
A MUTE
PB H
REC H
W.ASP.ON
AV L (FSS IN)
INPUT SEL A
STILL+SLOW
W.ASP/AV CTL IN
REC 12V AD
TO VD-A or AD-A
50/60 ASD+SW TO VD-A
S.CLK
S.DATA
IC802 (CP-1 BOARD)
ROM
I2C S.DATA
OSD DATA
OSD CS
OSD CLK
IC321 (TN-A)
ON SCREEN CONTROL
IC781 (TM-8)
VPS CONTROL
SDA
SCL
CVBS
VD VPS (TO VD-A)
VCR 3714 VPS/SV ONLY
CH+ DATA
CH+ CLK
TO TB-1
US CLK
V1/AV2
H SYNC
D6901-D6903
Q6901-Q6904
SYNC DET.
IF-UNIT
SD
A MUTE
AFT C
IF IN
AGC
V.OUT
A.OUT
Q6002
BUFFER
IC351 DIGITAL SERVO (XRU/BU 2890BK)
D3502
MC-BR
CTL P
C-FG P
MC-F/R
V LOCK P
C.SYNC
AF SW P
RF SW P
ALWAYS 5V
VR351
(SWITCHING POSITION)
(SW MM)D-PG MM
SV S CLK
SV S DATA
ROTARY
POTR 1 OUT
SP
4.43MHZ
FSC IN
VSS
GND(DIGITAL)
CFV OUT
CPV OUT
D-VDD
VDD(DIGITAL)
DFV OUT
DPV OUT
H.AMP SW
HEAD AMP SWITCHING
MC-BR LOGIC
1/2
VP WIDTH
VP DELAY
H-PULSE GEN.
DIGITAL M.M.
H-SYNC
SYNC SEP.
V.SYNC
VP TIMING
SW P GEN.
RF SW P
D-PG M.M.
SERVO DATA DET.
MODE CONTROL
PORT 1 OUT
FSC AMP
CLOCK
C-FG COUNTER
1/M
CAPSTAN SPEED CONTROL
ROM
PWM
CAPSTAN PHASE CONTROL
CAP REF-COUNTER
REC
ASB
TRIG
L.P.F (D/A CONVERTER)
DRUM SPEED CONTROL
DRUM PHASE CONTROL
HEAD SWITCH LOGIC
CTL DUTY DET.
CTL DUTY
TAPE SPEED DET.
REC
PB
F.F
F
R
SYNC DISCRIMINATION
REF-COUNTER
CTL COUNTER
CTL R
CTL F
D-FG COUNTER
CTL DELAY
TRACKING DIGITAL M.M.
REC CTL
CTL REC AMP
VDD
AMP BIAS
CTL PB AMP
GND(ANALOG)
AGC
CTL AMP
CAPSTAN FG AMP
DRUM FG AMP
DRUM PG AMP
CAPSTAN MIX AMP
CAP MIX -
CAP MIX +
DRUM MIX AMP
DRUM MIX -
DRUM MIX +
MODE CONTROL (SLOW.STILL.DRUM CTL)
0/1 DATA
TAPE SPEED
BIAS(FG AMP)
REC CTL-
REC CTL+
ALWAYS 5V
A-GND
CTL AMP -
MOTIVE IMPROVEMENT
Q3553
CTL AMP OUT
C-FG AMP OUT
C-FG IN
D-FG IN
D-PG IN
CAPSTAN-MIX OUT
Q3504
CAP MIX-
CAP MIX+
MIX OUT
DRM MIX-
DRM MIX+
C3514
R3520
GAIN CONTROL
SLOW+STILL
ENV.SW
FSC IN
RF SW P
C-SYNC
V LOCK PULSE
TO VD-A
MC-FR
MC-BR
CTL HEAD
MC-FR
C-FG
CAPSTAN MOTOR
CAPSTAN-VS
MECHANISM
D-PG
D-FG
HEAD DRUM MOTOR
C-VS CUT
BDS1-14289/TP1-GIT.EXIT
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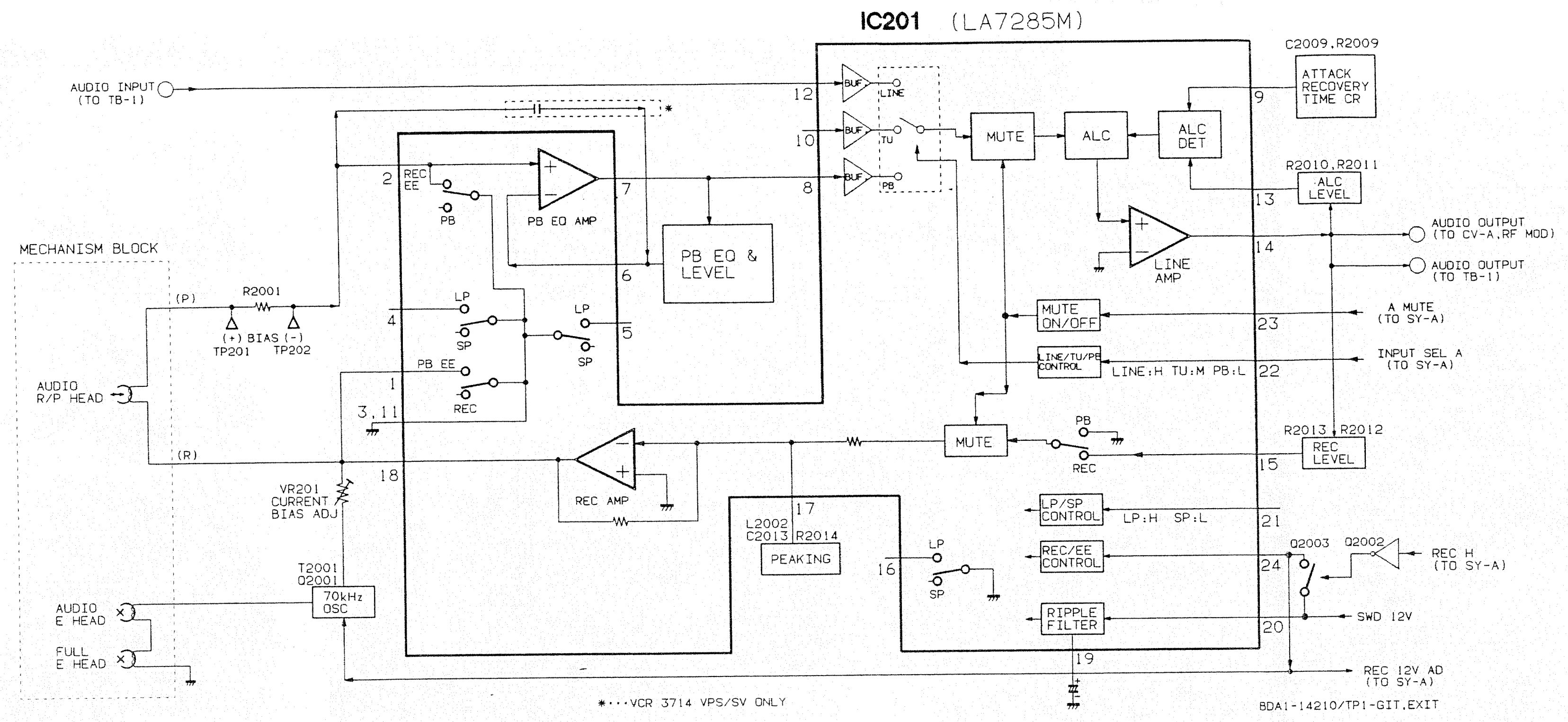
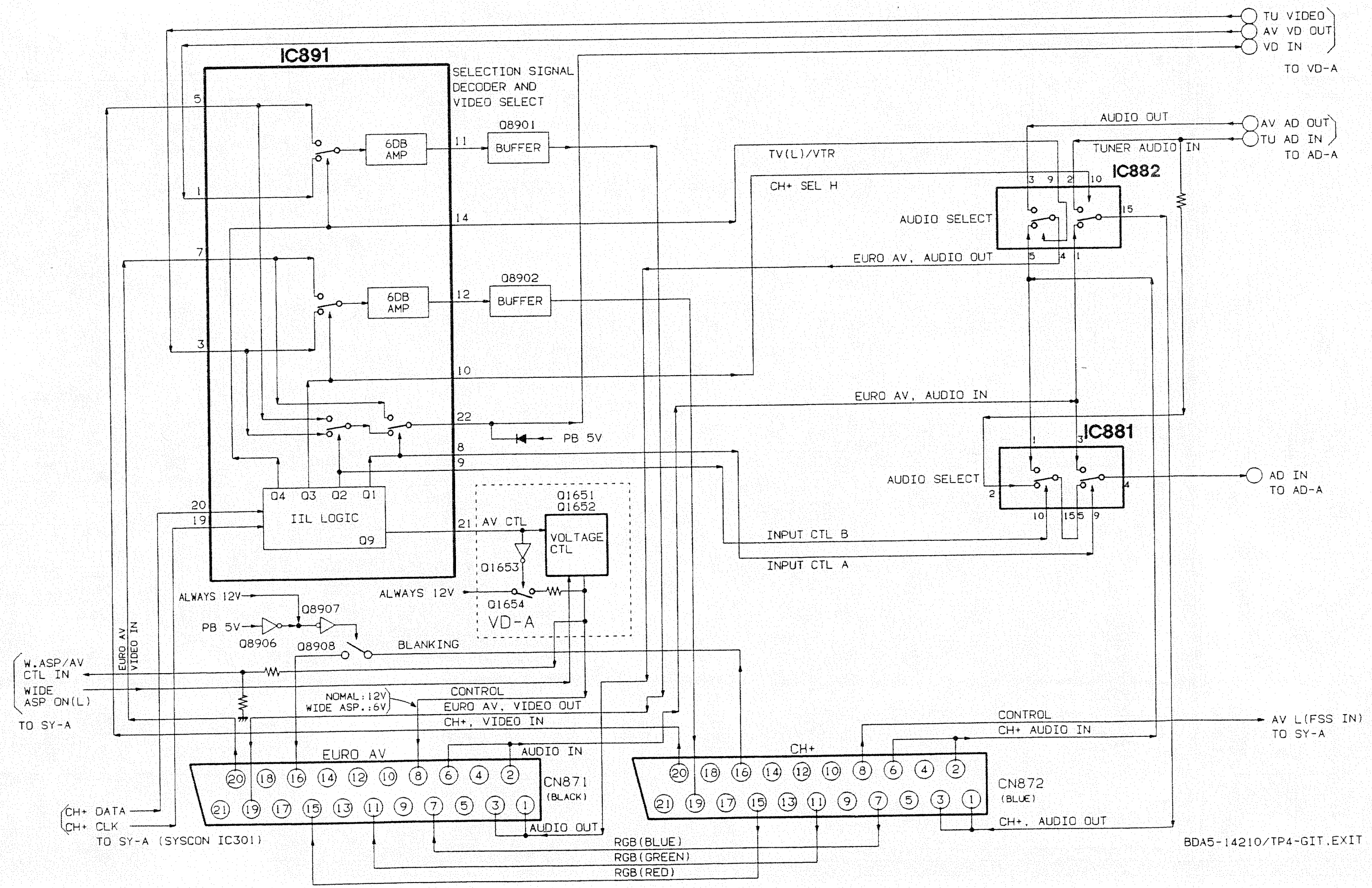
1-5. AUDIO CIRCUIT

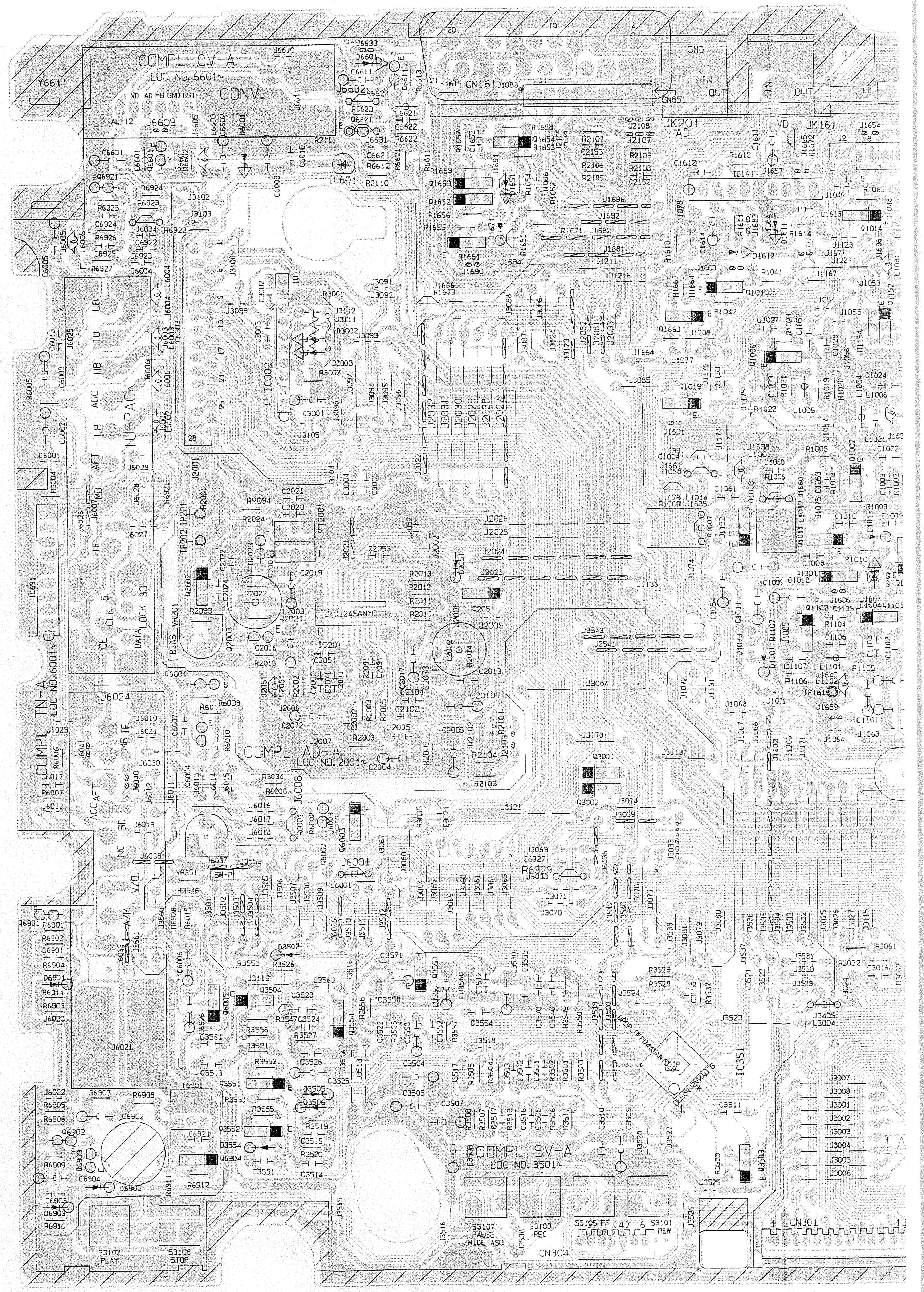

IC201 (LA7285M)
AUDIO INPUT (TO TB-1)
MECHANISM BLOCK
R2001
(+) BIAS (-)
TP201 TP202
AUDIO R/P HEAD
(P)
(R)
VR201 CURRENT BIAS ADJ
T2001 Q2001
70kHz OSC
AUDIO E HEAD
FULL E HEAD
REC EE
PB
PB EQ AMP
PB EQ & LEVEL
LP
SP
PB EE
REC
REC AMP
L2002 C2013 R2014
PEAKING
BUF
LINE
TU
MUTE
ALC
ALC DET
ATTACK RECOVERY TIME CR
C2009,R2009
R2010,R2011
ALC LEVEL
LINE AMP
AUDIO OUTPUT (TO CV-A,RF MOD)
AUDIO OUTPUT (TO TB-1)
MUTE ON/OFF
A MUTE (TO SY-A)
LINE/TU/PB CONTROL
LINE:H TU:M PB:L
INPUT SEL A (TO SY-A)
R2013,R2012
REC LEVEL
LP/SP CONTROL
LP:H SP:L
REC/EE CONTROL
Q2003 Q2002
REC H (TO SY-A)
RIPPLE FILTER
SWD 12V
REC 12V AD (TO SY-A)
3,11
*···VCR 3714 VPS/SV ONLY
BDA1-14210/TP1-GIT.EXIT

1-6. TERMINAL INPUT/OUTPUT SELECTOR CIRCUIT

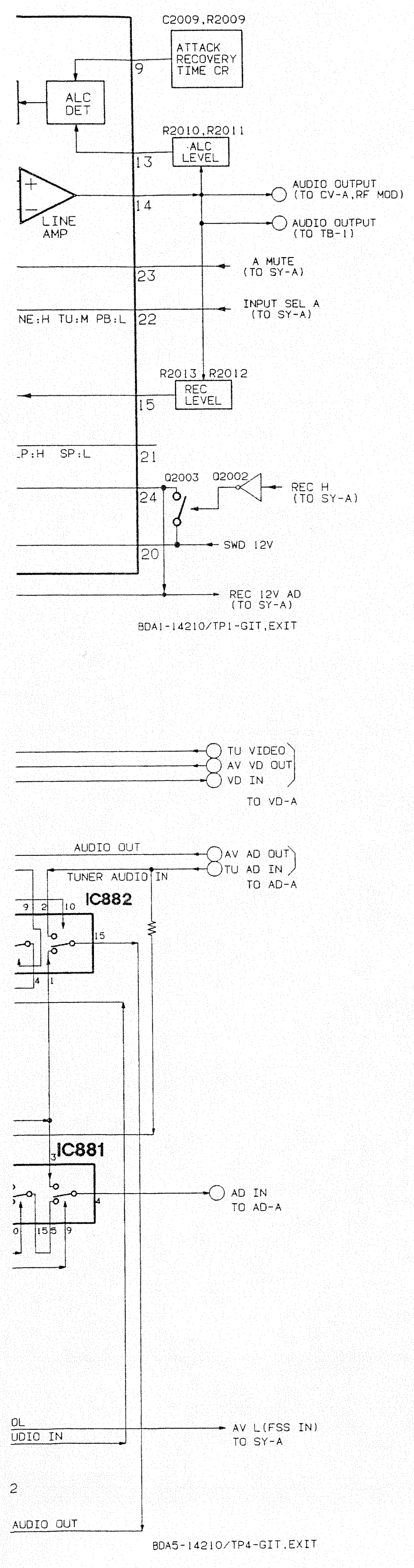

IC891
SELECTION SIGNAL DECODER AND VIDEO SELECT
6DB AMP
Q8901 BUFFER
Q8902 BUFFER
TV(L)/VTR
CH+ SEL H
AUDIO OUT
TUNER AUDIO IN
IC882
AUDIO SELECT
EURO AV. AUDIO OUT
EURO AV. AUDIO IN
IC881
AUDIO SELECT
AD IN TO AD-A
TU VIDEO
AV VD OUT
VD IN
TO VD-A
AV AD OUT
TU AD IN
TO AD-A
PB 5V
Q4 Q3 Q2 Q1
IIL LOGIC
Q9
AV CTL
Q1651 Q1652
VOLTAGE CTL
Q1653
Q1654
VD-A
ALWAYS 12V
Q8907
PB 5V
Q8906 Q8908
BLANKING
INPUT CTL B
INPUT CTL A
W.ASP/AV CTL IN
WIDE ASP ON(L)
TO SY-A
EURO AV VIDEO IN
NOMAL:12V WIDE ASP.:6V
CONTROL
EURO AV. VIDEO OUT
CH+. VIDEO IN
CONTROL
CH+ AUDIO IN
AV L(FSS IN) TO SY-A
EURO AV
CH+
AUDIO IN
CN871 (BLACK)
CN872 (BLUE)
AUDIO OUT
CH+. AUDIO OUT
CH+ DATA
CH+ CLK
TO SY-A (SYSCON IC301)
RGB(BLUE)
RGB(GREEN)
RGB(RED)
BDA5-14210/TP4-GIT.EXIT

2. CIRCUIT DIAGRAMS & PRINTED WIRING BOARDS (P.W.B.)

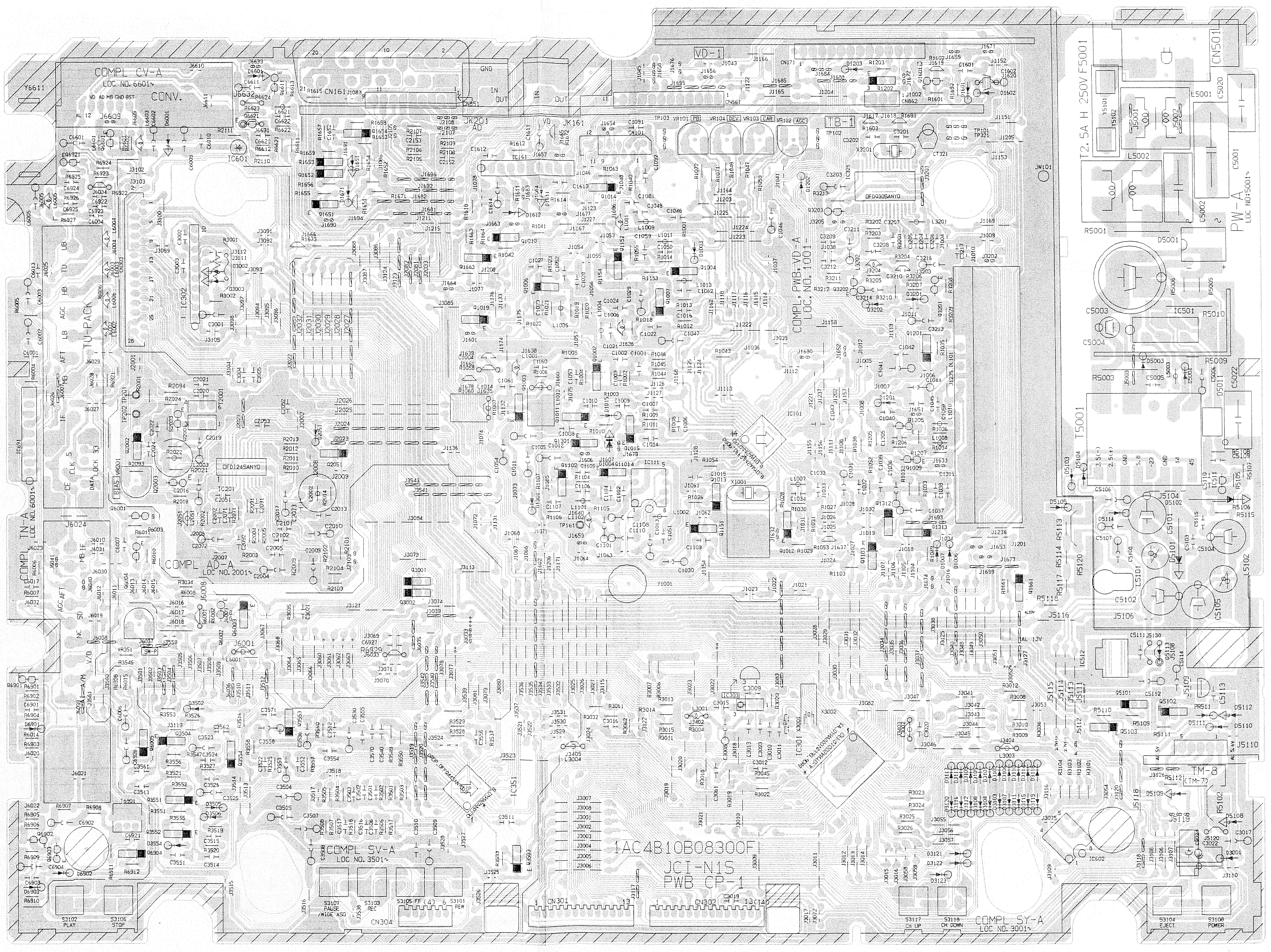
2-1. CP-


COMPL CV-A
LOC NO. 6601~
CONV.
COMPL TN-A
LOC NO. 6001~
TU-PACK
COMPL AD-A
LOC NO. 2001~
COMPL SV-A
LOC NO. 3501~
IC601
IC201
IC302
IC351
JK201
JK161
CN161
CN304
CN301
S3102 PLAY
S3105 STOP
S3107 PAUSE /WIDE ASP
S3103 REC
S3105 FF
S3101 REW
GND
IN
OUT

2. CIRCUIT DIAGRAMS & PRINTED WIRING BOARDS (P.W.B.)


C2009,R2009
ATTACK RECOVERY TIME CR
ALC DET
R2010,R2011
ALC LEVEL
LINE AMP
AUDIO OUTPUT (TO CV-A,RF MOD)
AUDIO OUTPUT (TO TB-1)
A MUTE (TO SY-A)
INPUT SEL A (TO SY-A)
NE:H TU:M PB:L
R2013 R2012
REC LEVEL
.P:H SP:L
Q2003 Q2002
REC H (TO SY-A)
SWD 12V
REC 12V AD (TO SY-A)
BDA1-14210/TP1-GIT.EXIT
TU VIDEO
AV VD OUT
VD IN
TO VD-A
AUDIO OUT
AV AD OUT
TU AD IN
TO AD-A
TUNER AUDIO IN
IC882
IC881
AD IN
TO AD-A
AV L(FSS IN)
TO SY-A
AUDIO IN
AUDIO OUT
BDA5-14210/TP4-GIT.EXIT

2-1. CP-1 P.W.B.


COMPL CV-A
LOC NO. 6601~
CONV.
VD-1
TB-1
IC601
IC161
JK161
JK201 AD
CN161
CN171
CN862
CN861
CN501
PW-A
LOC NO.5001~
T2.5A H 250V F5001
L5001
L5002
R5001
D5001
C5003
C5004
IC501
R5010
R5009
R5003
T5001
COMPL PWR-VD-A
LOC. NO. 1001~
IC101
X1001
X3201
IC201
IC301
IC302
IC351
IC602
TU-PACK
COMPL IN-A
LOC NO. 6001~
COMPL AD-A
LOC NO. 2001~
COMPL SV-A
LOC NO. 3501~
COMPL SY-A
LOC NO. 3001~
1AC4B10B08300F
JCI-N1S
PWB CP-1
CN301
CN302
CN304
S3102 PLAY
S3106 STOP
S3107 PAUSE /WIDE ASO
S3103 REC
S3105 FF
S3101 REW
S3117 CH UP
S3118 CH DOWN
S3104 EJECT
S3108 POWER
TM-8 (TM-7)
J5110
J5116
J5105
J5104
Y1001
Y6611

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

K

J

I

H

G

F

E

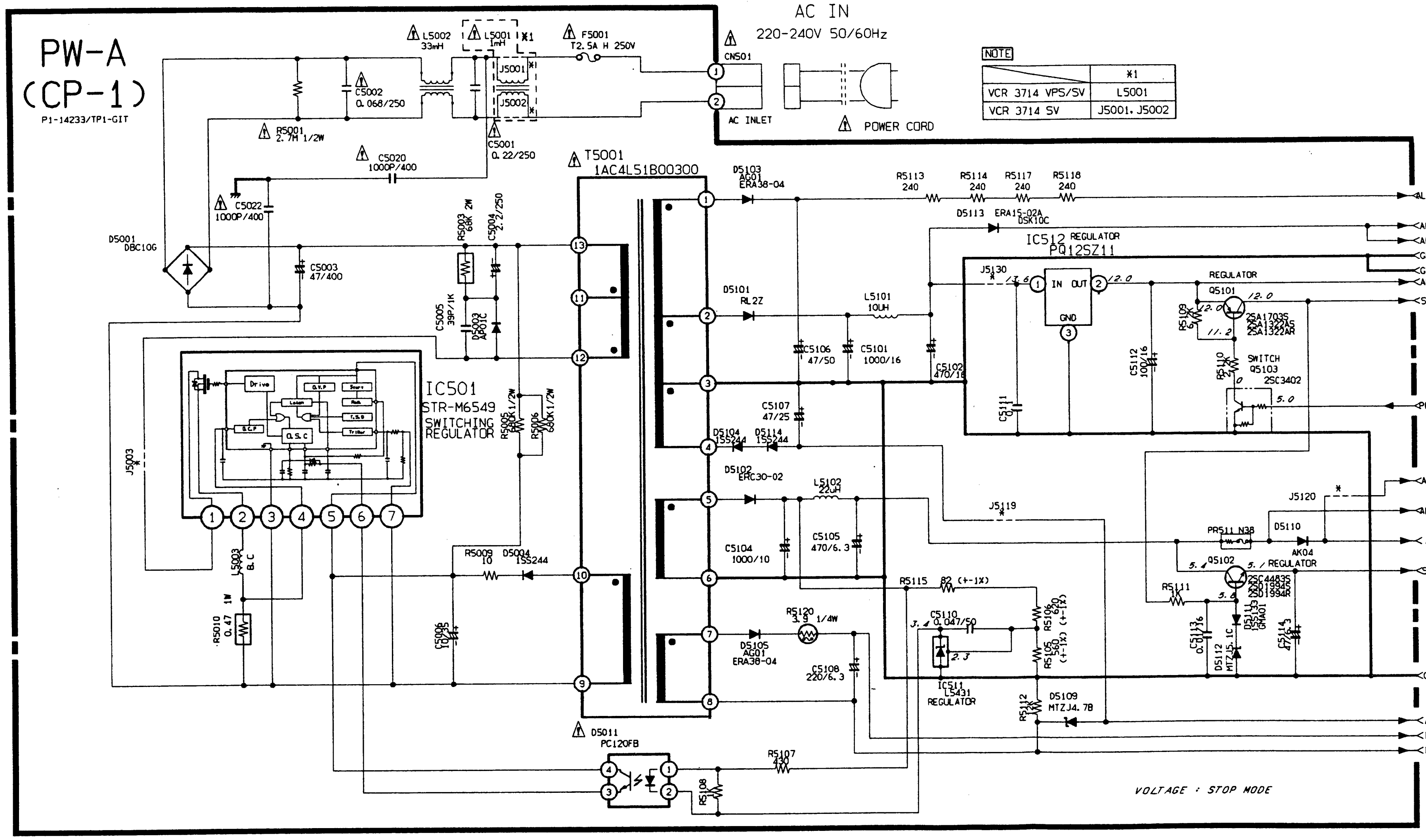
D

C

B

A

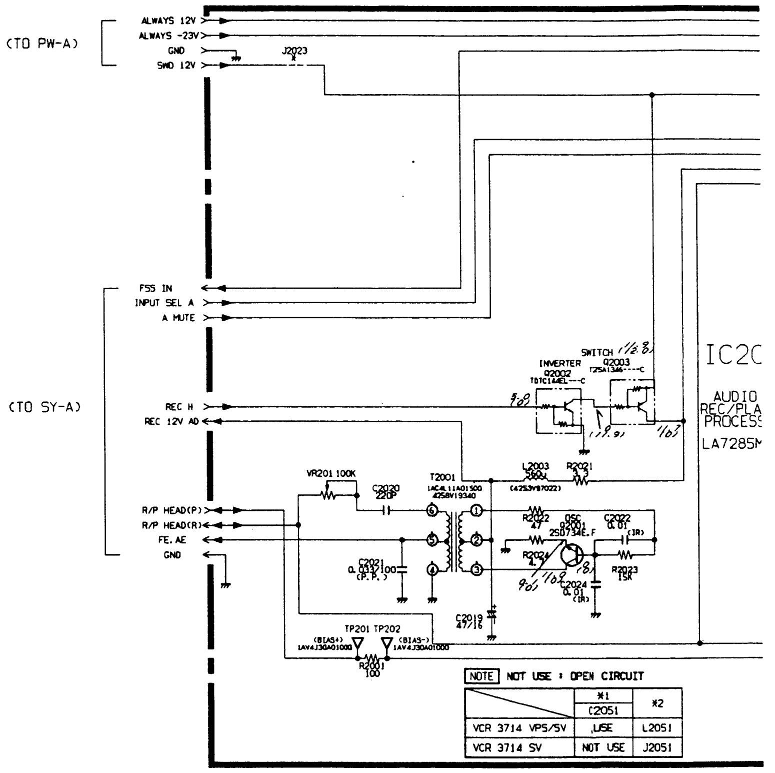
2-2. CP-1 BOARD (PW-A) POWER SUPPLY


PW-A
(CP-1)
P1-14233/TP1-GIT
AC IN
220-240V 50/60Hz
CN501
AC INLET
POWER CORD
L5002 33mH
L5001 1mH ✻1
J5001
J5002
F5001 T2.5A H 250V
C5002 0.068/250
R5001 2.7M 1/2W
C5020 1000P/400
C5001 0.22/250
C5022 1000P/400
D5001 DBC10G
C5003 47/400
R5003 68K 2W
C5004 2.2/250
C5005 39P/1K
D5003 AP01C
T5001 1AC4L51B00300
IC501 STR-M6549 SWITCHING REGULATOR
Drive
O.V.P
Start
Latch
Reg
T.S.D
O.C.P
O.S.C
Trigger
R5005 680K 1/2W
R5006 680K 1/2W
J5003
L5003 B.C
R5010 0.47 1W
R5009 10
D5004 1SS244
C5006 10/35
D5011 PC120FB
R5108 1K
R5107 430
D5103 AG01 ERA38-04
R5113 240
R5114 240
R5117 240
R5118 240
D5113 ERA15-02A DSK10C
IC512 REGULATOR PQ12SZ11
J5130
13.6
IN OUT
GND
12.0
D5101 RL2Z
L5101 10UH
C5106 47/50
C5101 1000/16
C5102 470/16
C5111 0.1
C5112 100/16
REGULATOR Q5101
12.0
R5109 6.8K
11.2
2SA1703S 2SA1322AS 2SA1322AR
R5110 22K
SWITCH Q5103 2SC3402
0
5.0
C5107 47/25
D5104 1SS244
D5114 1SS244
D5102 ERC30-02
L5102 22uH
C5104 1000/10
C5105 470/6.3
J5119
J5120
PR511 N38
D5110 AK04
Q5102 REGULATOR
5.4
5.1
5.8
2SC4483S 2SD1994S 2SD1994R
R5111 1K
C5113 0.01/16
D5111 1SS133 GMA01
D5112 MTZJ5.1C
C5114 47/6.3
R5115 82 (+-1%)
R5106 620 (+-1%)
R5105 560 (+-1%)
C5110 0.047/50
3.4
2.3
IC511 L5431 REGULATOR
R5120 3.9 1/4W
D5105 AG01 ERA38-04
C5108 220/6.3
R5112 12K
D5109 MTZJ4.7B
ALWAYS 32V
ALWAYS 13V
ALWAYS 13V
GND
GND
ALWAYS 12V
SWD 12V
POWER UP
ALWAYS 5V(SV)
ALWAYS 5.6V
ALWAYS 5V
SWD 5V
GND
ALWAYS -23V
HEATER +
HEATER -
VOLTAGE : STOP MODE

NOTE

	✻1
VCR 3714 VPS/SV	L5001
VCR 3714 SV	J5001. J5002

2-3.

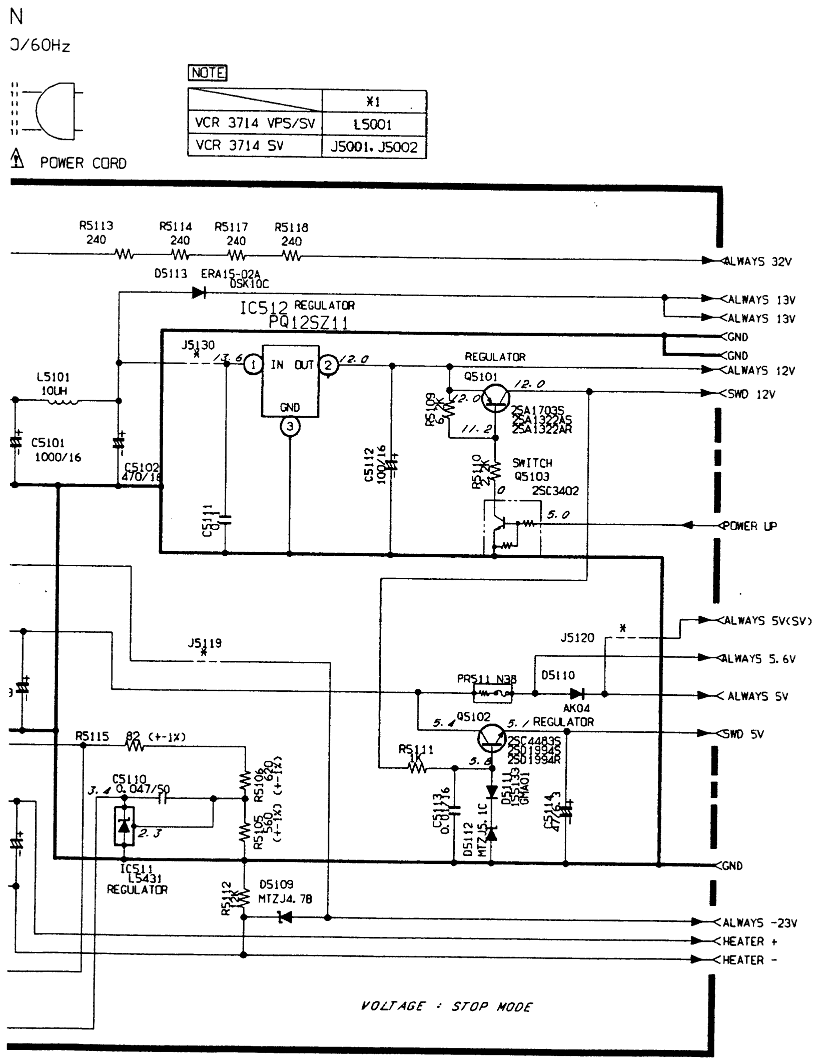

(TO PW-A)
ALWAYS 12V
ALWAYS -23V
GND
SWD 12V
J2023
(TO SY-A)
FSS IN
INPUT SEL A
A MUTE
REC H
REC 12V AD
R/P HEAD(P)
R/P HEAD(R)
FE. AE
GND
IC20
AUDIO REC/PLA PROCESS
LA7285M
SWITCH Q2003 T2SA1346---C
INVERTER Q2002 TDTC144EL---C
(12.8)
5.0
(0)
(11.9)
(10)
VR201 100K
C2020 220P
T2001 1AC4L11A01500 4258V19340
L2003 560u (4253V87022)
R2021 3.3
R2022 47
OSC Q2001 2SD734E.F
C2022 0.01 (IR)
R2024 4.7
(8)
(9.0)
(10.9)
C2024 0.01 (IR)
R2023 15K
C2021 0.033/100 (P.P.)
C2019 47/16
TP201 TP202
(BIAS+) 1AV4J30A01000
(BIAS-) 1AV4J30A01000
R2001 100

NOTE NOT USE : OPEN CIRCUIT

	✻1 C2051	✻2
VCR 3714 VPS/SV	,USE	L2051
VCR 3714 SV	NOT USE	J2051

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

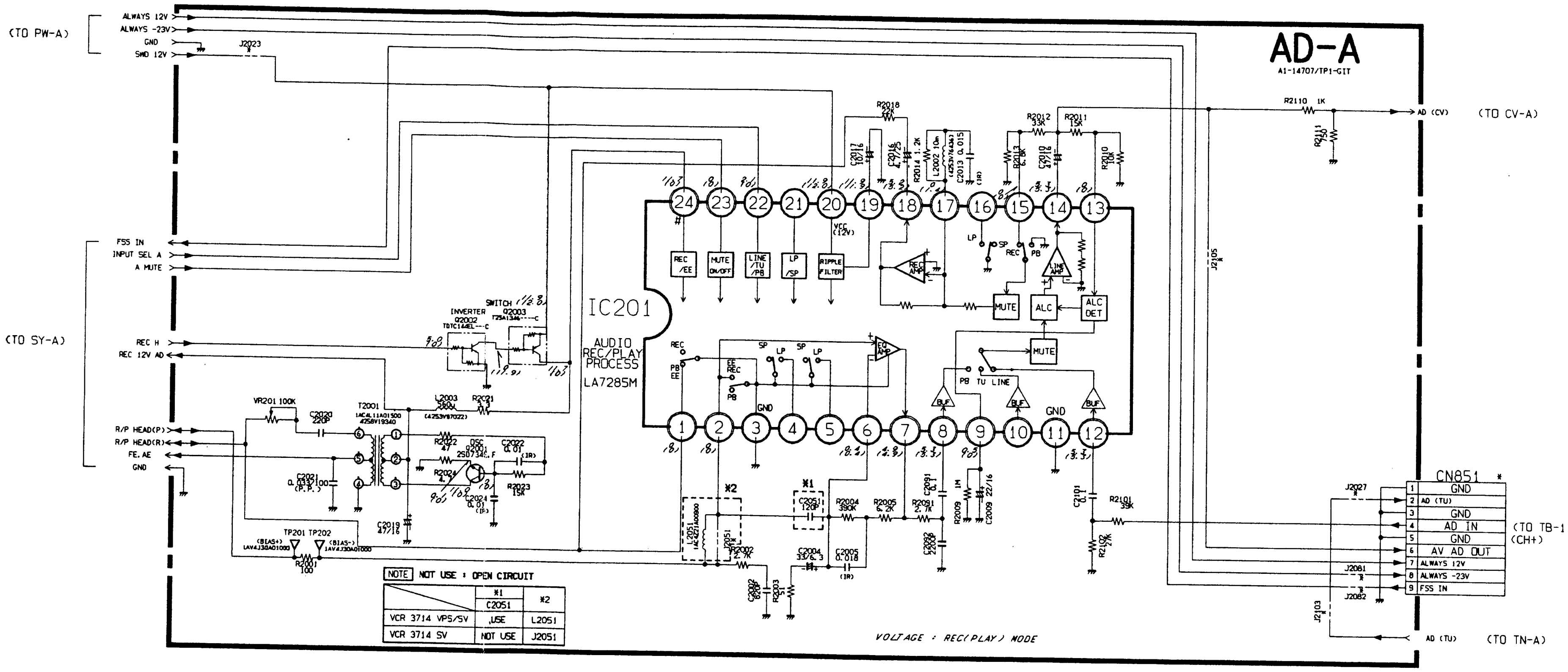
ER SUPPLY


N
0/60Hz
POWER CORD
R5113 240
R5114 240
R5117 240
R5118 240
D5113 ERA15-02A
IC512 REGULATOR PQ12SZ11
J5130
IN OUT GND
L5101 10UH
C5101 1000/16
C5102 470/16
C5111
C5112 100/16
REGULATOR Q5101 2SA1703S 2SA1322AS 2SA1322AR
R5109
R5110
SWITCH Q5103 2SC3402
J5119
J5120
PR511 N38
D5110 AK04
Q5102 REGULATOR 2SC4483S 2SD1994S 2SD1994R
R5111
R5115 82
C5110 0.047/50
R5106
R5105 560
C5113
C5114
D5112 MTZJ5.1C
IC511 L5431 REGULATOR
R5112
D5109 MTZJ4.7B
ALWAYS 32V
ALWAYS 13V
ALWAYS 13V
GND
GND
ALWAYS 12V
SWD 12V
POWER UP
ALWAYS 5V(SV)
ALWAYS 5.6V
ALWAYS 5V
SWD 5V
GND
ALWAYS -23V
HEATER +
HEATER -
VOLTAGE : STOP MODE

NOTE

	※1
VCR 3714 VPS/SV	L5001
VCR 3714 SV	J5001, J5002

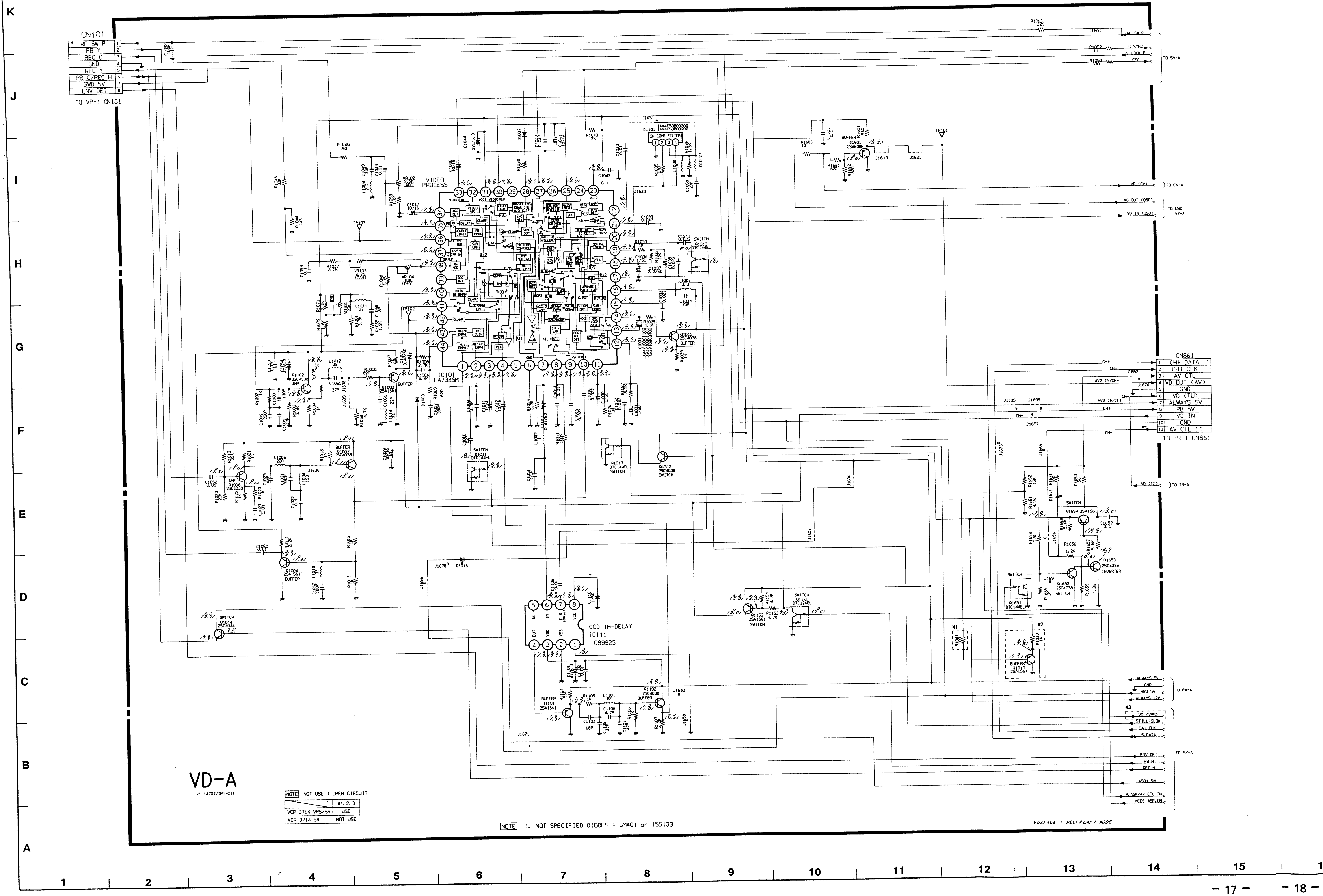
2-3. CP-1 BOARD (AD-A) AUDIO


AD-A
A1-14707/IP1-GIT
(TO PW-A)
ALWAYS 12V
ALWAYS -23V
GND
SWD 12V
J2023
(TO SY-A)
FSS IN
INPUT SEL A
A MUTE
REC H
REC 12V AD
R/P HEAD(P)
R/P HEAD(R)
FE. AE
GND
INVERTER Q2002
SWITCH Q2003
VR201 100K
T2001
L2003
OSC Q2001
R2024 4.7
C2024 0.01
R2023 15K
C2019 47/16
TP201 TP202
(BIAS+) (BIAS-)
IC201
AUDIO REC/PLAY PROCESS
LA7285M
REC /EE
MUTE ON/OFF
LINE /TU /PB
LP /SP
RIPPLE FILTER
REC AMP
ALC
ALC DET
MUTE
LINE AMP
PB TU LINE
BUF
GND
R2110 1K
AD (CV)
(TO CV-A)
R2101 39K
C2051
L2051
R2004
R2005
C2004
C2005
CN851
1 GND
2 AD (TU)
3 GND
4 AD IN
5 GND
6 AV AD OUT
7 ALWAYS 12V
8 ALWAYS -23V
9 FSS IN
(TO TB-1)
(CH+)
J2027
J2081
J2082
J2103
AD (TU)
(TO TN-A)
VOLTAGE : REC(PLAY) MODE

NOTE NOT USE : OPEN CIRCUIT

	※1 C2051	※2
VCR 3714 VPS/SV	,USE	L2051
VCR 3714 SV	NOT USE	J2051

2-4. CP-1 BOARD (VD-A) VIDEO


CN101
RF SW P
PB Y
REC C
GND
REC Y
PB C/REC H
SWD SV
ENV DET
TO VP-1 CN181
VIDEO PROCESS
IC101 LA7345M
CCD 1H-DELAY
IC111
LC89925
2H COMB FILTER
BUFFER
SWITCH
AMP
INVERTER
TO SV-A
TO CV-A
TO OSD SY-A
TO TN-A
TO PW-A
TO SY-A
CN861
CH+ DATA
CH+ CLK
AV CTL
VD OUT (AV)
GND
VD (TU)
ALWAYS 5V
PB 5V
VD IN
GND
AV CTL L1
TO TB-1 CN861
VD-A
V1-1470T/TP1-G1T
VOLTAGE : REC/PLAY/ MODE
K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

NOTE NOT USE : OPEN CIRCUIT

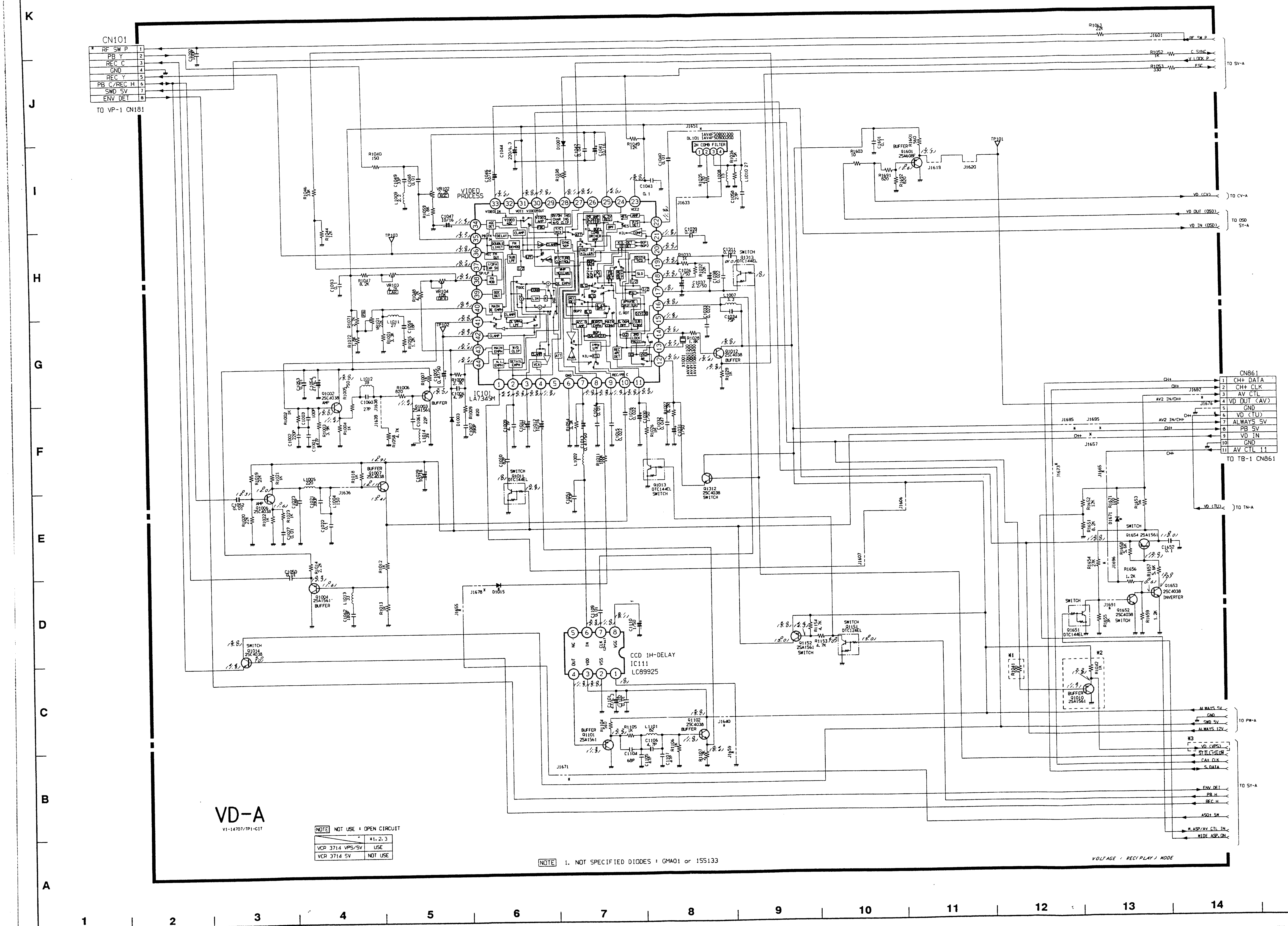
	*1, 2, 3
VCR 3714 VPS/SV	USE
VCR 3714 SV	NOT USE

NOTE 1. NOT SPECIFIED DIODES : GMA01 or 1SS133

2-5.

TES

2-4. CP-1 BOARD (VD-A) VIDEO


K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
CN101
RF SW P
PB Y
REC C
GND
REC Y
PB C/REC H
SWD 5V
ENV DET
TO VP-1 CN181
VIDEO PROCESS
IC101 LA7345M
CCD 1H-DELAY
IC111
LC89925
R1063 22K
J1601
RF SW P
R1052 1K
C SYNC
V LOCK P
R1053 330
FSC
TO SV-A
VD (CV)
TO CV-A
VD OUT (OSD)
VD IN (OSD)
TO OSD SY-A
CN861
CH+ DATA
CH+ CLK
AV CTL
VD OUT (AV)
GND
VD (TU)
ALWAYS 5V
PB 5V
VD IN
GND
AV CTL 11
TO TB-1 CN861
VD (TU)
TO TN-A
ALWAYS 5V
GND
SWD 5V
ALWAYS 12V
TO PW-A
*3
VD (VPS)
STILL+SLOW
CA+ CLK
S.DATA
ENV DET
PB H
REC H
ASO+ SW
W.ASP/AV CTL IN
WIDE ASP.ON
TO SY-A
VD-A
V1-1470T/TP1-C1T
VOLTAGE : REC(PLAY) MODE

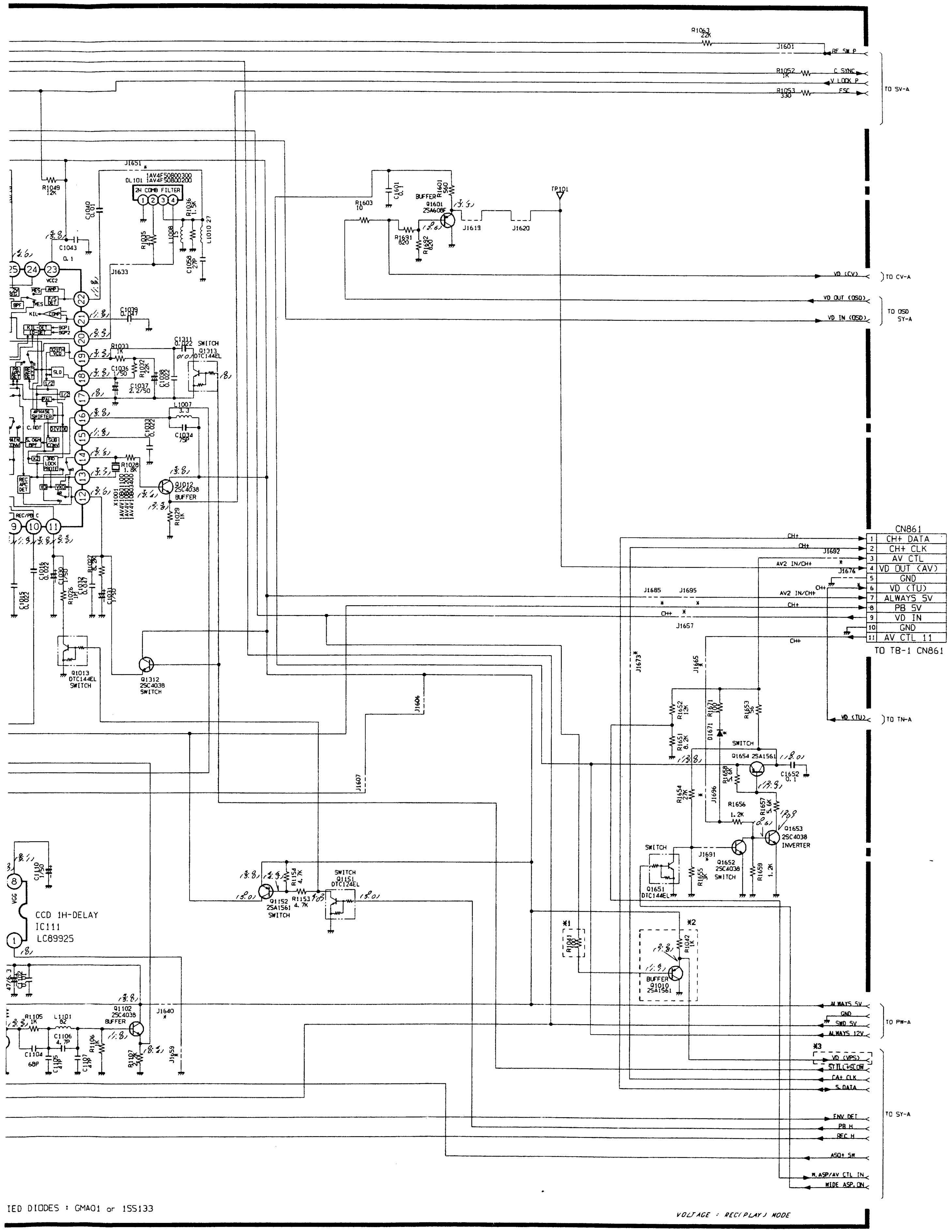
NOTE NOT USE : OPEN CIRCUIT

	*1.2.3
VCR 3714 VPS/SV	USE
VCR 3714 SV	NOT USE

NOTE 1. NOT SPECIFIED DIODES : GMA01 or 1SS133

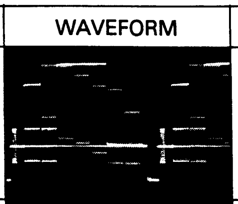
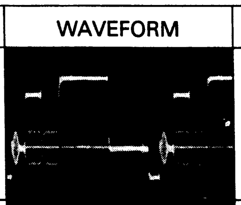
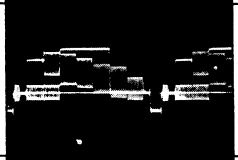
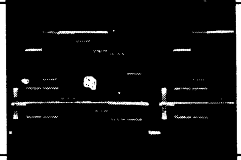
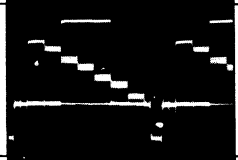
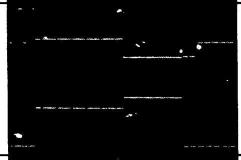
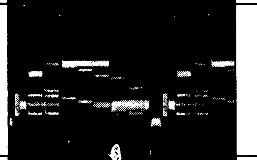
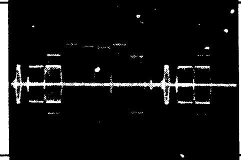
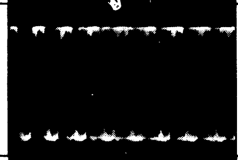
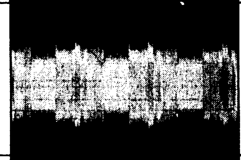
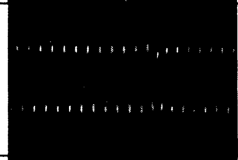
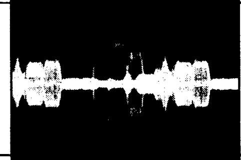
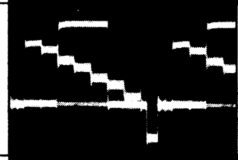
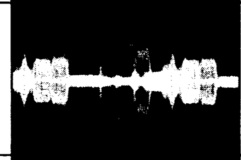
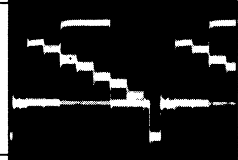
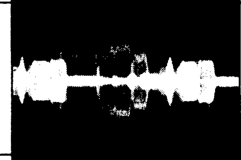
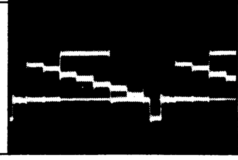
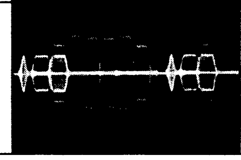
2-5.

2-4. CP-1 BOARD (VD-A) VIDEO

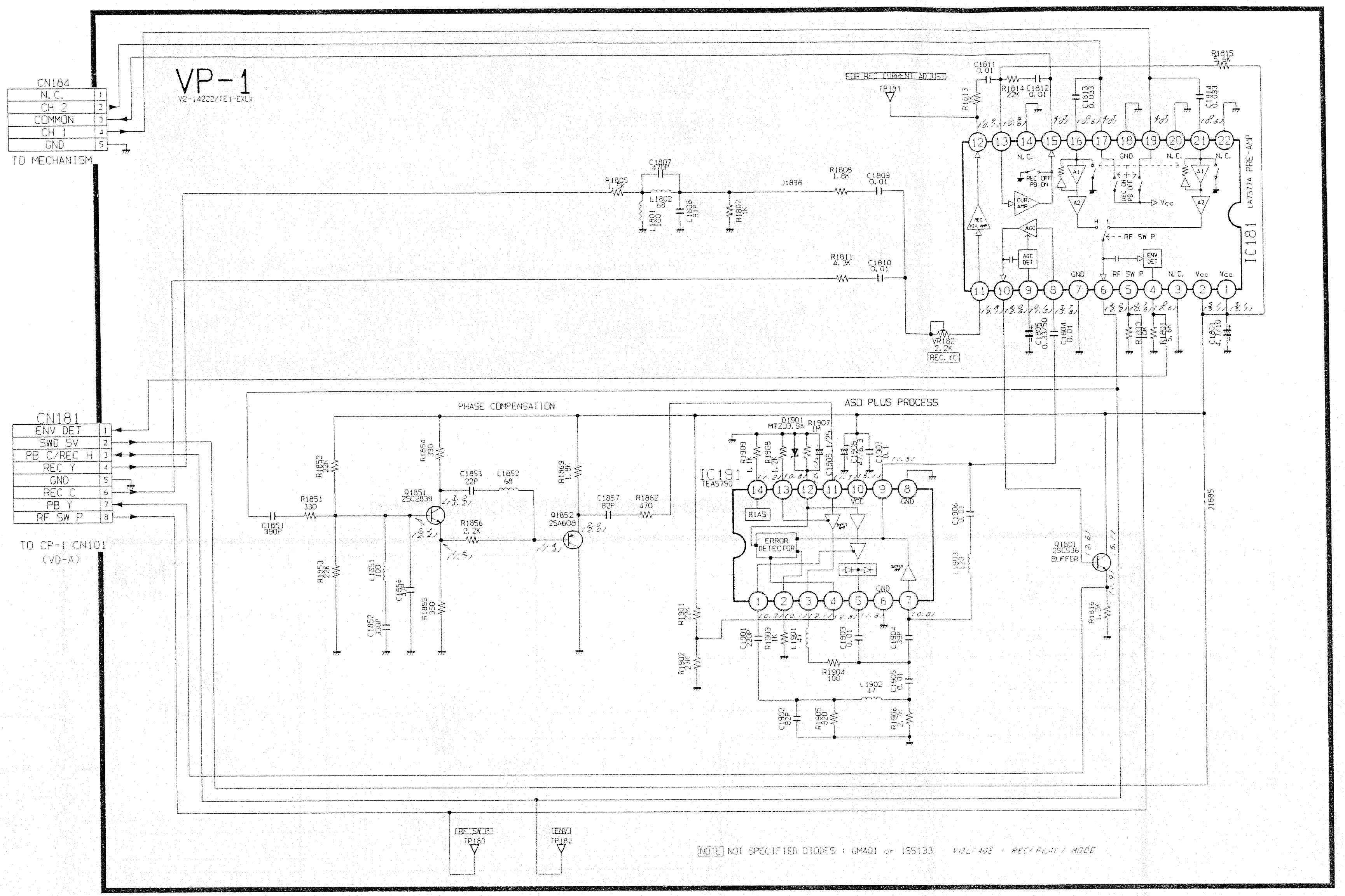

R1063 22K
J1601
RF SW P
R1052 1K
C SYNC
V LOCK P
R1053 330
FSC
TO SY-A
J1651
DL101 1AV4F50800300
2H COMB FILTER
BUFFER
Q1601 2SA608F
TP101
J1619
J1620
VD (CV)
TO CV-A
VD OUT (OSD)
VD IN (OSD)
TO OSD SY-A
SWITCH
Q1313 DTC144EL
Q1012 2SC4038 BUFFER
CN861
1 CH+ DATA
2 CH+ CLK
3 AV CTL
4 VD OUT (AV)
5 GND
6 VD (TU)
7 ALWAYS 5V
8 PB 5V
9 VD IN
10 GND
11 AV CTL 11
TO TB-1 CN861
VD (TU)
TO TN-A
Q1013 DTC144EL SWITCH
Q1312 2SC4038 SWITCH
Q1654 2SA1561
Q1653 2SC4038 INVERTER
Q1652 2SC4038 SWITCH
Q1651 DTC144EL
Q1152 2SA1561 SWITCH
Q1151 DTC124EL SWITCH
CCD 1H-DELAY
IC111
LC89925
Q1102 2SC4038 BUFFER
BUFFER Q1010 2SA1561
ALWAYS 5V
GND
SWD 5V
ALWAYS 12V
TO PW-A
VD (VPS)
CAS CLK
S DATA
ENV DET
PB H
REC H
ASO+ SW
WIDE ASP ON
TO SY-A
IED DIODES : GMA01 or 1SS133
VOLTAGE : REC/PLAY MODE

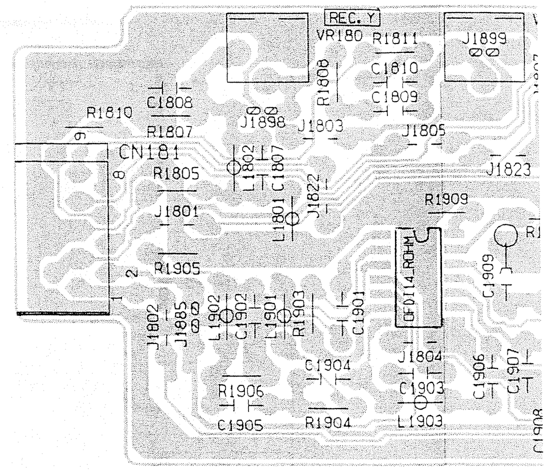
2-5. VIDEO CIRCUIT WAVEFORMS

WF-V-TP

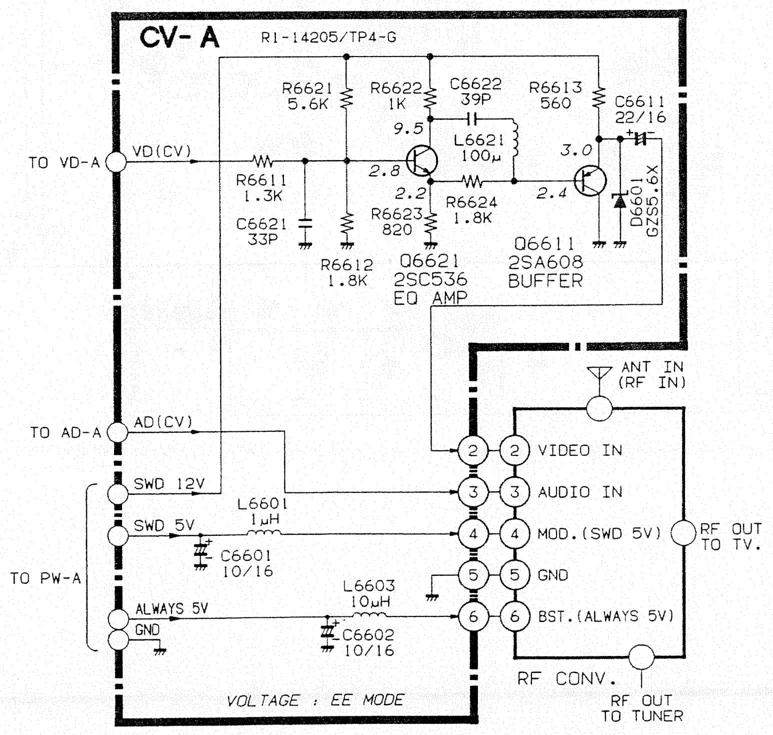
TEST LOCATION	WAVEFORM	MODE/LEVEL	TEST LOCATION	WAVEFORM	MODE/LEVEL
IC101 Pin 33 (VIDEO IN)		REC, EE 1 Vp-p	IC101 Pin 30 (VIDEO OUT)		PB 2.5 Vp-p
IC101 Pin 41		REC, EE 0.6 Vp-p	IC101 Pin 30 (VIDEO OUT)		REC, EE 2 Vp-p
IC101 Pin 42		REC, EE 0.5 Vp-p	IC101 (UPPER) Pin 30 (LOWER) Pin 28		STILL (UPPER) 2 Vp-p (LOWER) 5 Vp-p
IC101 Pin 43		REC, EE 1.2 Vp-p	IC101 Pin 10 (REC CHROMA OUT)		REC, EE 0.4 Vp-p
IC101 Pin 36 (REC FM OUT)		REC, EE 1.0 Vp-p	Q1006 Base (PB CHROMA)		PB 0.3 Vp-p
IC101 Pin 35 (PB FM IN)		PB 0.3 Vp-p	Q1007 Emitter (PB CHROMA)		PB 0.2 Vp-p
IC101 Pin 41		PB 0.5 Vp-p	IC101 Pin 10 (PB CHROMA IN)		PB 0.2 Vp-p
IC101 Pin 42		PB 0.5 Vp-p	IC101 Pin 20		PB 1.0 Vp-p
IC101 Pin 7/4		PB 0.3 Vp-p	IC101 Pin 26		PB 0.6 Vp-p

2-6. VP-1 BOARD VIDEO PRE-AMP

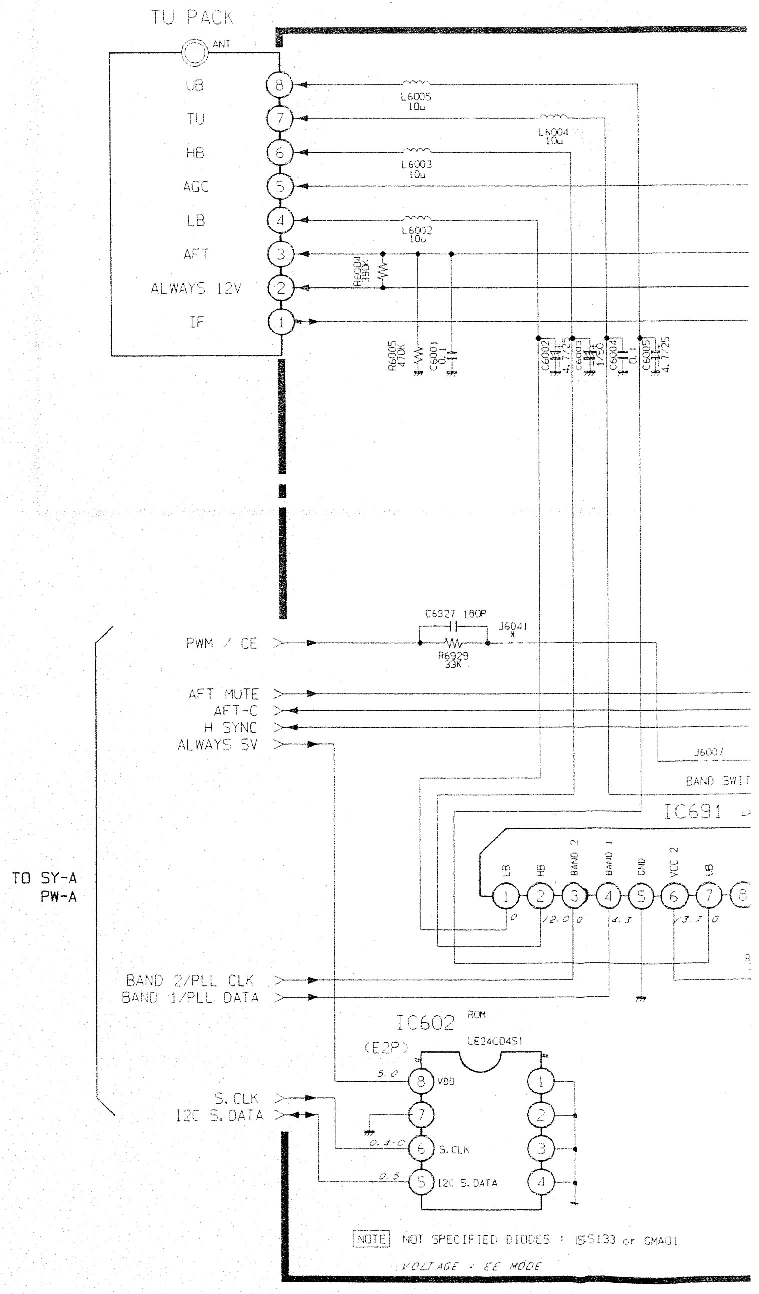

VP-1
CN184
N.C.
CH 2
COMMON
CH 1
GND
TO MECHANISM
CN181
ENV DET
SWD 5V
PB C/REC H
REC Y
GND
REC C
PB Y
RF SW P
TO CP-1 CN101 (VD-A)
PHASE COMPENSATION
ASO PLUS PROCESS
IC181 LA7377A PRE-AMP
IC191
BIAS
ERROR DETECTOR
Q1851 2SC2839
Q1852 2SA608
Q1801 2SC536 BUFFER
VR182 REC IC
NOTE NOT SPECIFIED DIODES : GMA01 or 1SS133
VOLTAGE : REC/PLAY MODE


REC. Y
VR180
R1811
J1899
C1810
C1809
R1810
C1808
R1807
J1898
J1803
J1805
CN181
R1805
J1801
R1909
J1823
R1905
OF014(ROHM)
C1909
J1802
J1885
L1902
C1902
L1901
R1903
C1901
J1804
C1904
C1903
C1906
C1907
R1906
C1905
R1904
L1903

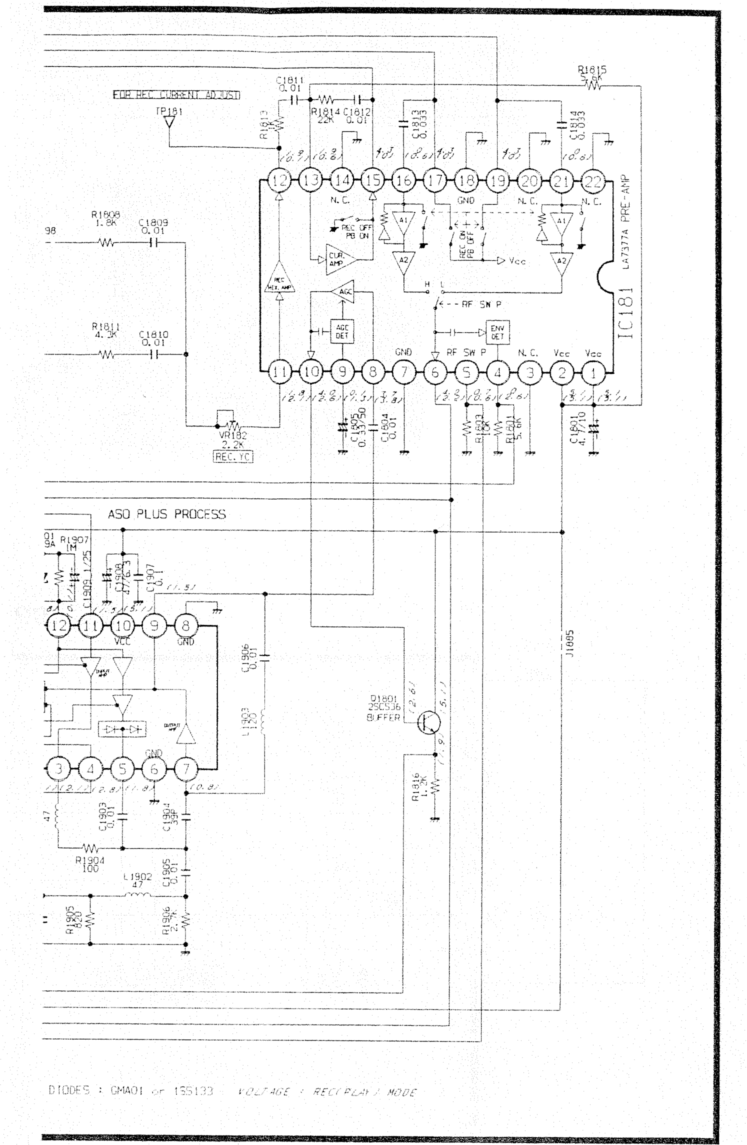
2-7. CP-1 BOARD (CV-A) RF CONVERTER CONNECTION


CV- A
R1-14205/TP4-G
R6621 5.6K
R6622 1K
C6622 39P
R6613 560
C6611 22/16
9.5
L6621 100μ
3.0
2.8
2.2
2.4
R6611 1.3K
R6624 1.8K
R6623 820
D6601 GZS5.6X
C6621 33P
R6612 1.8K
Q6621 2SC536 EQ AMP
Q6611 2SA608 BUFFER
TO VD-A
VD(CV)
TO AD-A
AD(CV)
TO PW-A
SWD 12V
SWD 5V
ALWAYS 5V
GND
L6601 1μH
C6601 10/16
L6603 10μH
C6602 10/16
ANT IN (RF IN)
VIDEO IN
AUDIO IN
MOD.(SWD 5V)
GND
BST.(ALWAYS 5V)
RF OUT TO TV.
RF CONV.
RF OUT TO TUNER
VOLTAGE : EE MODE

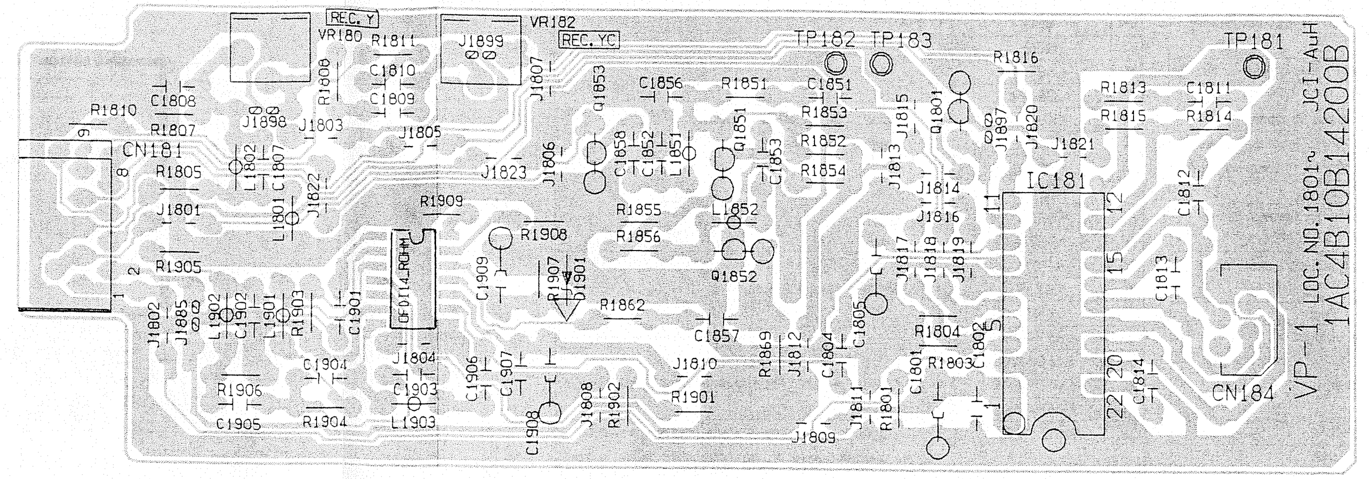
2-9. CP


TU PACK
ANT
UB
TU
HB
AGC
LB
AFT
ALWAYS 12V
IF
L6005 10μ
L6004 10μ
L6003 10μ
L6002 10μ
PWM / CE
C6327 180P
R6929 33K
AFT MUTE
AFT-C
H SYNC
ALWAYS 5V
BAND SWIT
IC691
TO SY-A PW-A
BAND 2/PLL CLK
BAND 1/PLL DATA
IC602 ROM (E2P)
LE24C04S1
VDD
S.CLK
I2C S.DATA
S. CLK
I2C S. DATA
NOTE NOT SPECIFIED DIODES : 1SS133 or GMA01
VOLTAGE : EE MODE

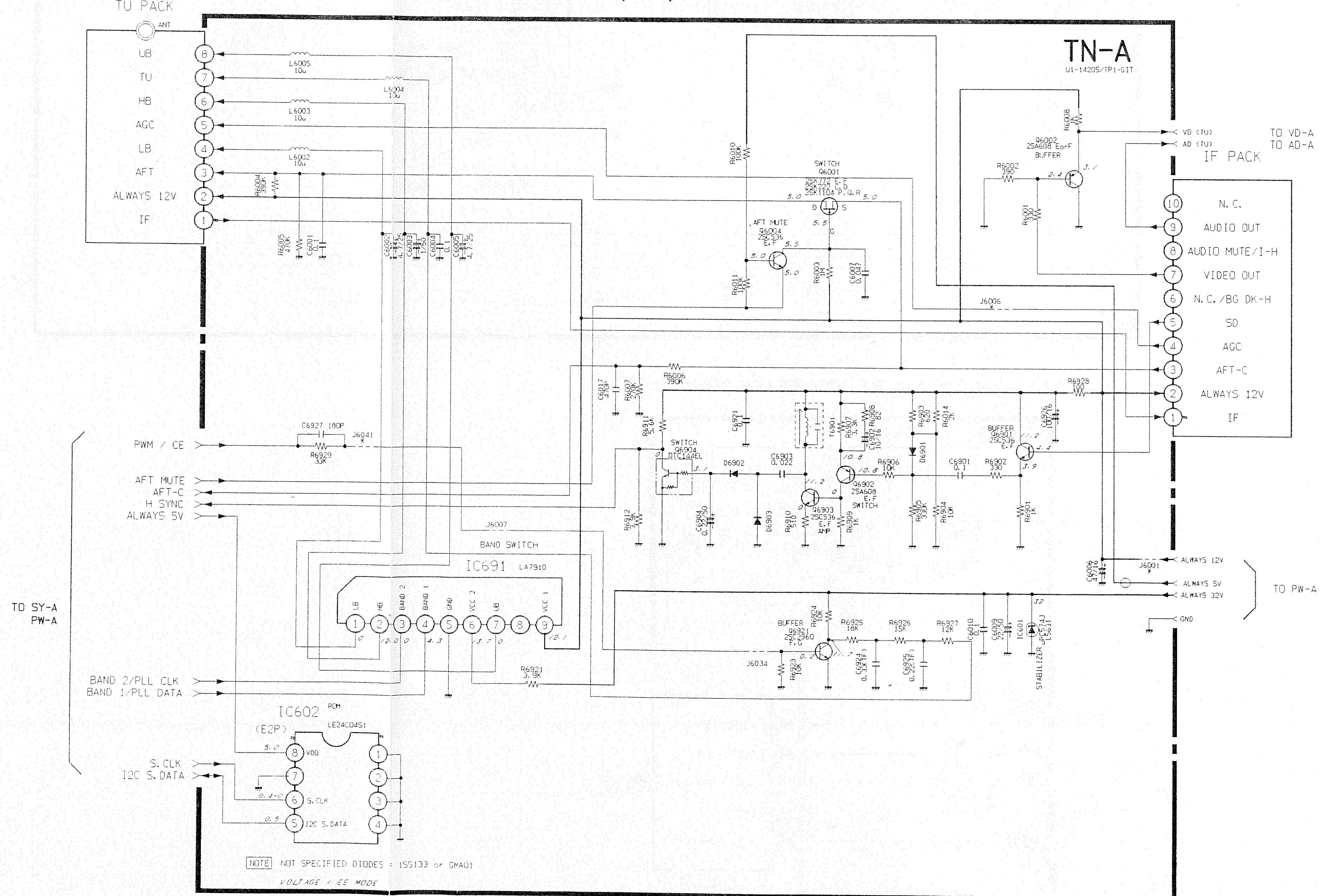
RE-AMP


FOR REC CURRENT ADJUST
TP181
IC181 LA7377A PRE-AMP
VR182 REC.YC
ASO PLUS PROCESS
Q1801 2SC536 BUFFER
J1895
DIODES : GMA01 or 1SS133
VOLTAGE (REC/PLAY) MODE

2-8. VP-1 P.W.B.


REC.Y
VR180
VR182
REC.YC
TP182
TP183
TP181
IC181
CN181
CN184
VP-1 LOC.NO.1801~ JCI-AuH
1AC4B10B14200B

2-9. CP-1 BOARD (TN-A) TUNER IF CONNECTION

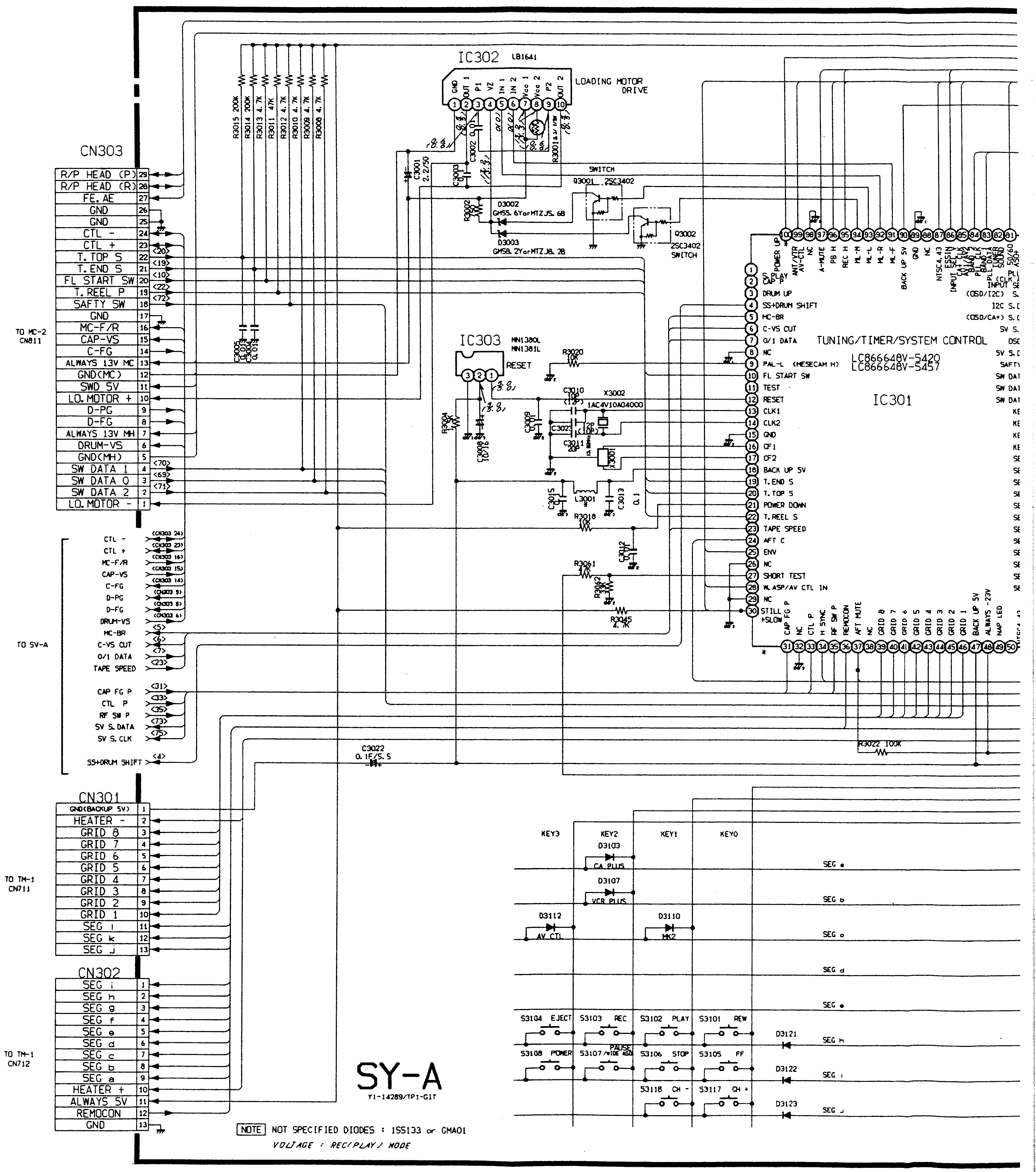

TU PACK
ANT
UB
TU
HB
AGC
LB
AFT
ALWAYS 12V
IF
TN-A
TO VD-A
TO AD-A
IF PACK
N.C.
AUDIO OUT
AUDIO MUTE/I-H
VIDEO OUT
N.C./BG DK-H
SD
AGC
AFT-C
ALWAYS 12V
IF
PWM / CE
AFT MUTE
AFT-C
H SYNC
ALWAYS 5V
TO SY-A
PW-A
BAND 2/PLL CLK
BAND 1/PLL DATA
S.CLK
I2C S.DATA
BAND SWITCH
IC691 LA7910
IC602 (E2P) LE24C04S1
ALWAYS 12V
ALWAYS 5V
ALWAYS 32V
GND
TO PW-A
STABILIZER
NOTE NOT SPECIFIED DIODES : 1SS133 or GMA01
VOLTAGE : EE MODE

2-10. IC301 SYSTEM CONTROL,TIMER, & TUNING CONTROL MPU PIN FUNCTIONS TABLE

No.	Name	I/O	I/O Signal Function
1	S - PLAY	O	Signal for indicating CUE , REV , STILL and SLOW modes.
2	CAP P.	O	Gain down control for Head Motor Amplifier at SLOW mode.
3	DRUM UP	O	Head drum motor rotation speed up signal.
4	SS + DRUM SHIFT	O	Signal for indicating SLOW/STILL modes and alternation of drum motor control data. (3 value voltage)
5	MC - BR	O	Brake signal for capstan motor.
6	C - Vs CUT	O	Cut off for capstan motor control voltage in SLOW / STILL modes.
7	0 / 1 DATA	I	CTL pulse duty detection signal input. Used for VISS detection.
8	-	-	-
9	PAL L	O	PAL mode indication signal output.
10	FL- START SW	I	Switch input indicating start of cassette loading or discharge by cassette mechanism.
11	-	-	-
12	RESET	I	Initial reset terminal for this IC.
13	XT1	-	Clock OSC during power failures. Frequency is 32.672kHz.
14	XT2	-	
15	VSS	-	Ground terminal
16	CF1	-	IC clock OSC terminal. Frequency is 13.92MHz.
17	CF2	-	
18	VDD	-	IC power supply terminal.(5Vdc)
19	T. END S.	I	Sensor signal input for tape end detection.
20	T. TOP S.	I	Sensor signal input for tape beginning detection.
21	POWER DOWN	I	Power failure detection terminal.
22	T. REEL P.	I	Pulse input for detection of take-up reel table rotation.
23	TAPE SPEED	I	Input of result of tape speed discrimination by digital servo IC.
24	AFT- C	I	Tuner AFT s-curve signal input for tuner AFT control.
25	ENV.	I	Video head envelope detection signal input for ATR function.
26	-	-	-
27	SHORT TEST	I	REC mode indication signal input (REC 12V).
28	W. ASP/ AV CTL IN	I	AV source selection signal input from AV terminal.
29	-	-	-
30	STILL + SLOW	O	STILL or SLOW modes indication signal output.
31	C - FG P.	I	FG signal input of capstan motor.
32	-	-	-
33	CTL P.	I	CTL head recording / playback pulse signal input.
34	H SYNC	I	Sync. signal input for existing channel discrimination and TV system discrimination.
35	RF SW P.	I	Input of RF switching pulse created by head drum PG.
36	REMOCON	I	Remote control signal input.
37	AFT MUTE	O	"H" output during TU AFT mute. (V-syn model only)
38	-	-	-
39	G8	O	Display grid outputs (FLD).
40	G7	O	
41	G6	O	
42	G5	O	
43	G4	O	
44	G3	O	
45	G2	O	
46	G1	O	
47	VDD	-	IC power supply input.(5Vdc)
48	V LOAD	O	-30V input for FLD drive.
49	NAP LED	O	Signal for NAP indicator LED drive.
50	NTSC 4.43 LED	O	Signal for NTSC4.43 indicator LED drive.
51	-	-	-
52	-	-	-
53	SEG l	O	Display segment outputs (FLD). (Includes key-scan output)
54	SEG k	O	
55	SEG j	O	Display segment outputs (FLD). (Includes key-scan output)
56	SEG i	O	
57	SEG h	O	
58	SEG g	O	
59	SEG f	O	
60	SEG e	O	
61	SEG d	O	
62	SEG c	O	
63	SEG b	O	
64	SEG a	O	
65	KEY IN 0	I	Operation key data inputs.
66	KEY IN 1	I	
67	KEY IN 2	I	
68	KEY IN 3	I	
69	SW DATA 0	I	3-bit data indicating operation position of mechanism.
70	SW DATA 1	I	
71	SW DATA 2	I	
72	SAFETY SW	I	Terminal for accidental erasure prevention switch. No operation to recording mode while "LOW" is input.
73	SV S. DATA	O	Output 8-bit X 4 serial data giving operation mode and tracking data,etc., to digital servo IC.
74	OSD CS	O	Chip enable (access) signal output to OSD IC.
75	SV S. CLK	O	The clock pulse for digital servo IC.
76	S. DATA (OSD/CH+)	I/O	Terminal for communication of respective data with OSD IC and CH+ control IC.
77	I2C SDA	I/O	Data exchange with tuning memory IC and VPS IC.
78	S. CLK (OSD/I2C)	O	The clock pulse for OSD IC and tuning memory IC.
79	INPUT SEL A	O	Signal for selecting audio input source.
80	PLL CS	O	Chip enable signal output to tuner PLL tuning system IC. (F-syn model)
	PWM	O	Tuning voltage output (PWM signal). (V-syn model)
81	ASO +	O	ASO + mode indication signal output to video circuit for Video picture quality selection.
82	TUNER SOUND	O	TV system indication signal output (PAL I or DK).
83	BAND 1	O	Tuning band data(BAND 1 and 2 ; for V-syn model).
	PLL DATA	O	Data exchange with tuner PLL IC (for F-syn model).
84	BAND 2	O	BAND 1 and 2 ; (L,L)=VHF-LOW (L,H)=VHF-HIGH (H,L)=UHF (H,H)=SKIP. (for V-syn model)
	PLL CLK	O	The clock for PLL IC of tuner unit (for F-syn model).
85	CH+ CLK	O	The clock for CH+ input/output source selection IC.
	AV1 / AV2	O	Signal for selecting AV-input (video/audio) source.
86	INPUT SEL V	O	Signal for selecting video input source.
	FSS IN	I	CH+ mode control signal input (CH+ model).
87	NTSC 4.43	O	" H " output during NTSC 4.43 playback mode.
88	-	-	-
89	VSS	-	IC ground terminal.
90	VDD	-	IC power supply input.(5Vdc)
91	ML- F	O	Loading motor rotation direction (FWD) indication signal.
92	ML- R	O	Loading motor rotation direction (REV) indication signal.
93	ML- L	O	Loading motor rotation speed (low speed) indication signal.
94	ML- M	O	Loading motor rotation speed (medium speed) indication signal.
95	REC H	O	Signal for indicating recording mode.
96	PB H	O	Signal for indicating playback mode.
97	A MUTE	O	"H" output for disable audio output signal.
98	-	-	-
99	AV CTL	O	AV terminal (pin8 of 21pins AV socket) control signal output.
	ANT / VTR	O	Selection the RF source of ANTENNA or VTR.
100	POWER UP	O	"HIGH" output except when power is off. Indicating that power is ON.

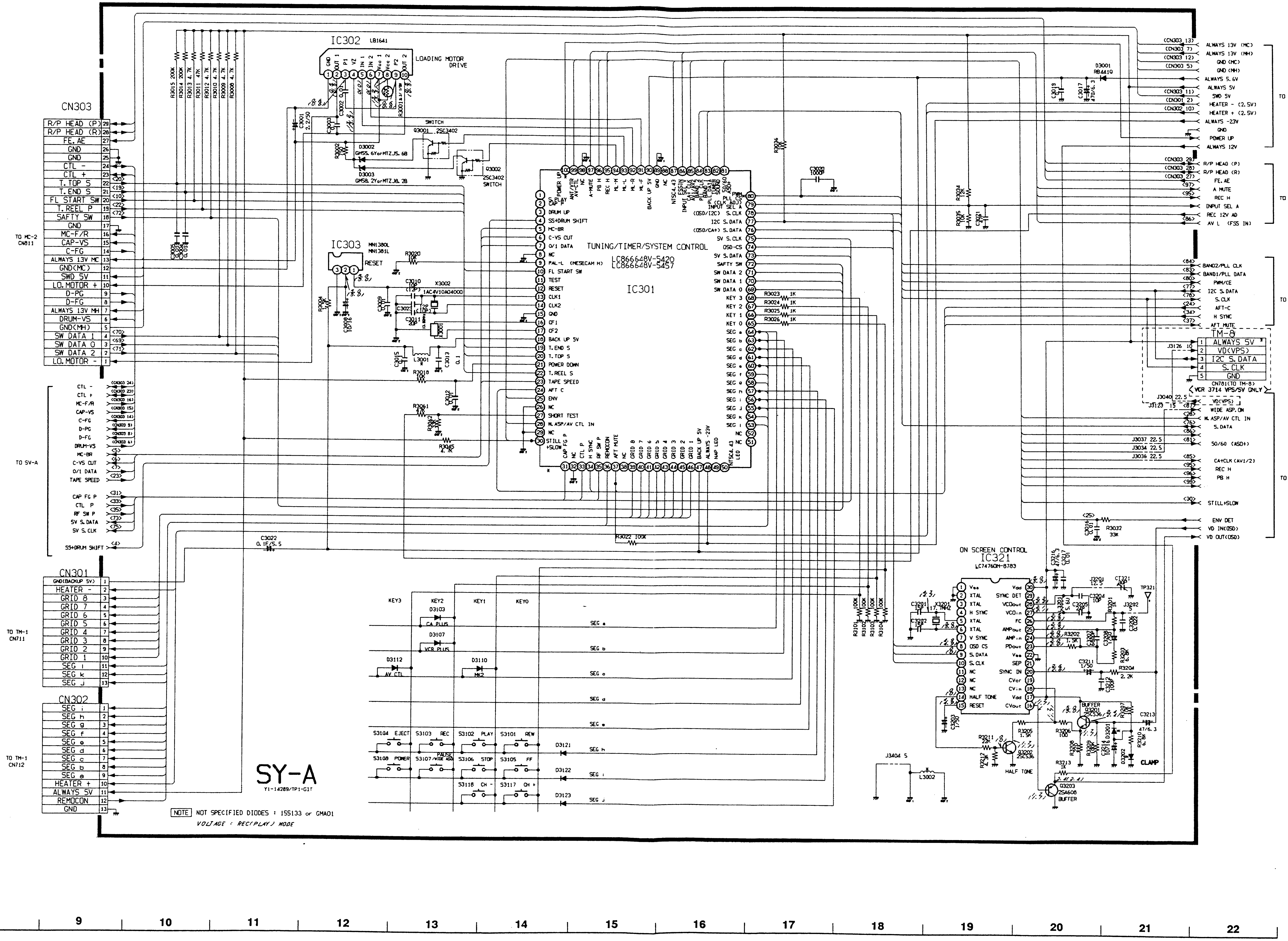
TP4VF_IT

2-11. CP-1 BOARD (SY-A) SYS

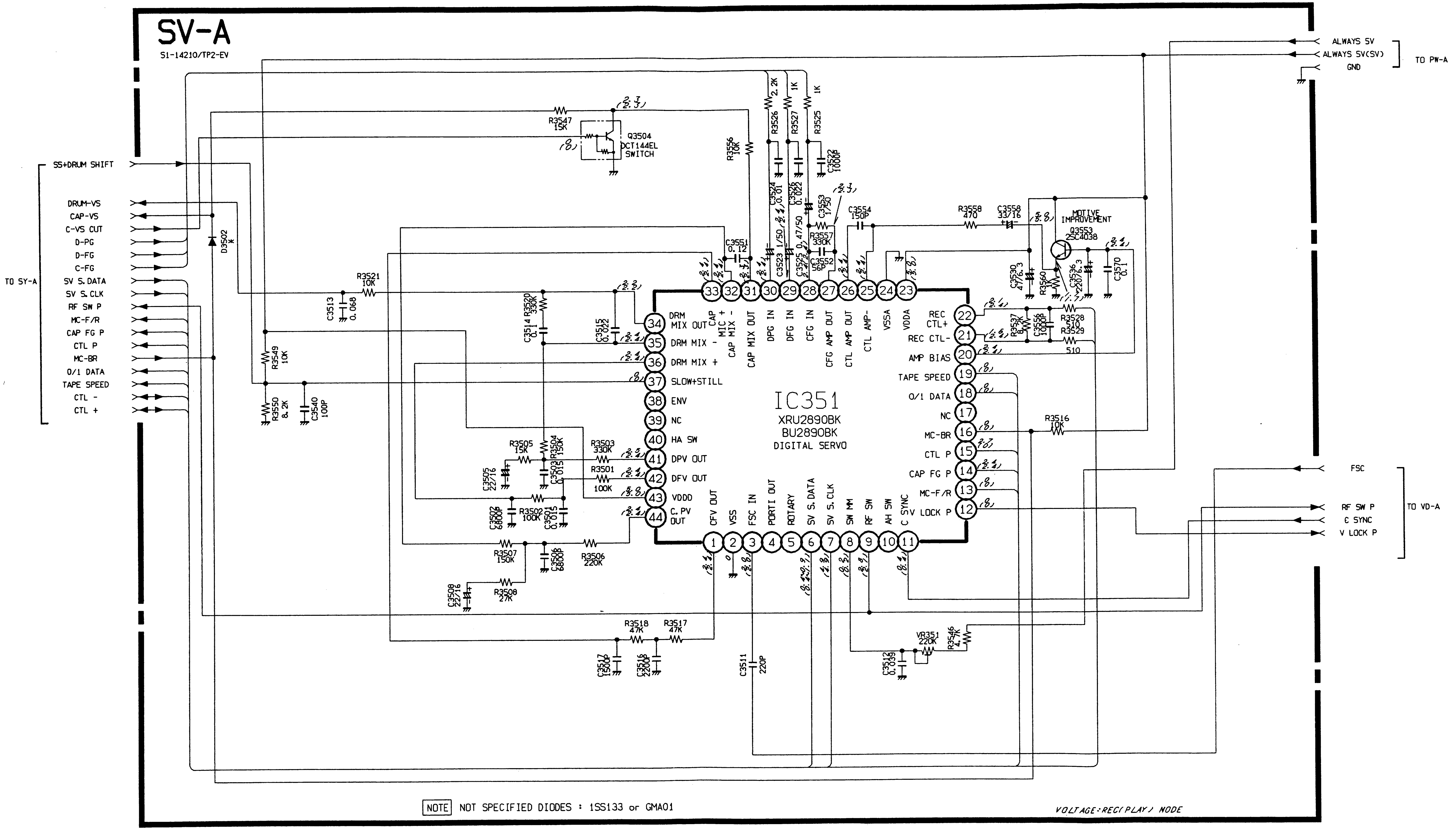


IC302 LB1641
LOADING MOTOR DRIVE
SWITCH
Q3001 2SC3402
Q3002 2SC3402 SWITCH
D3002 GMS5.6YorMTZJ5.6B
D3003 GMS8.2YorMTZJ8.2B
CN303
R/P HEAD (P)
R/P HEAD (R)
FE. AE
GND
GND
CTL -
CTL +
T. TOP S
T. END S
FL START SW
T. REEL P
SAFTY SW
GND
MC-F/R
CAP-VS
C-FG
ALWAYS 13V MC
GND(MC)
SWD 5V
LD MOTOR +
D-PG
D-FG
ALWAYS 13V MH
DRUM-VS
GND(MH)
SW DATA 1
SW DATA 0
SW DATA 2
LD MOTOR -
TO MC-2 CN811
TO SV-A
IC303 MN1380L MN1381L
RESET
X3002 1AC4V10A04000
IC301
TUNING/TIMER/SYSTEM CONTROL
LC866648V-5420
LC866648V-5457
CN301
GND(BACKUP 5V)
HEATER -
GRID 8
GRID 7
GRID 6
GRID 5
GRID 4
GRID 3
GRID 2
GRID 1
SEG l
SEG k
SEG j
TO TM-1 CN711
CN302
SEG i
SEG h
SEG g
SEG f
SEG e
SEG d
SEG c
SEG b
SEG a
HEATER +
ALWAYS 5V
REMOCON
GND
TO TM-1 CN712
KEY3
KEY2
KEY1
KEY0
S3104 EJECT
S3103 REC
S3102 PLAY
S3101 REW
S3108 POWER
S3107 PAUSE/WIDE ASO
S3106 STOP
S3105 FF
S3118 CH -
S3117 CH +
SY-A
Y1-14289/TP1-G1T
NOTE NOT SPECIFIED DIODES : 1SS133 or GMA01
VOLTAGE : REC(PLAY) MODE

2-11. CP-1 BOARD (SY-A) SYSTEM CONTROL


SY-A
Y1-14289/TP1-G1T
NOTE NOT SPECIFIED DIODES : 1SS133 or GMA01
VOLTAGE : REC(PLAY) MODE
IC301
TUNING/TIMER/SYSTEM CONTROL
LC866648V-5420
LC866648V-5457
IC302 LB1641
LOADING MOTOR DRIVE
IC303 MN1380L MN1381L
RESET
ON SCREEN CONTROL
IC321
LC74760M-8783
CN303
R/P HEAD (P)
R/P HEAD (R)
FE. AE
GND
CTL -
CTL +
T.TOP S
T.END S
FL START SW
T.REEL P
SAFTY SW
MC-F/R
CAP-VS
C-FG
ALWAYS 13V MC
GND(MC)
SWD 5V
LO. MOTOR +
D-PG
D-FG
ALWAYS 13V MH
DRUM-VS
GND(MH)
SW DATA 1
SW DATA 0
SW DATA 2
LO. MOTOR -
TO MC-2 CN811
TO SV-A
CN301
GND(BACKUP 5V)
HEATER -
GRID 8
GRID 7
GRID 6
GRID 5
GRID 4
GRID 3
GRID 2
GRID 1
SEG i
SEG k
SEG j
TO TM-1 CN711
CN302
SEG h
SEG g
SEG f
SEG e
SEG d
SEG c
SEG b
SEG a
HEATER +
ALWAYS 5V
REMOCON
TO TM-1 CN712
TO PW-A
TO AD-A
TO TN-A
TO VD-A
TM-8
ALWAYS 5V
VD(VPS)
I2C S. DATA
S. CLK
CN781(TO TM-8)
VCR 3714 VPS/SV ONLY
KEY3
KEY2
KEY1
KEY0
S3104 EJECT
S3103 REC
S3102 PLAY
S3101 REW
S3108 POWER
S3107 WIDE ASP PAUSE
S3106 STOP
S3105 FF
S3118 CH -
S3117 CH +
CA PLUS
VCR PLUS
AV CTL
MK2
BUFFER
HALF TONE
CLAMP
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

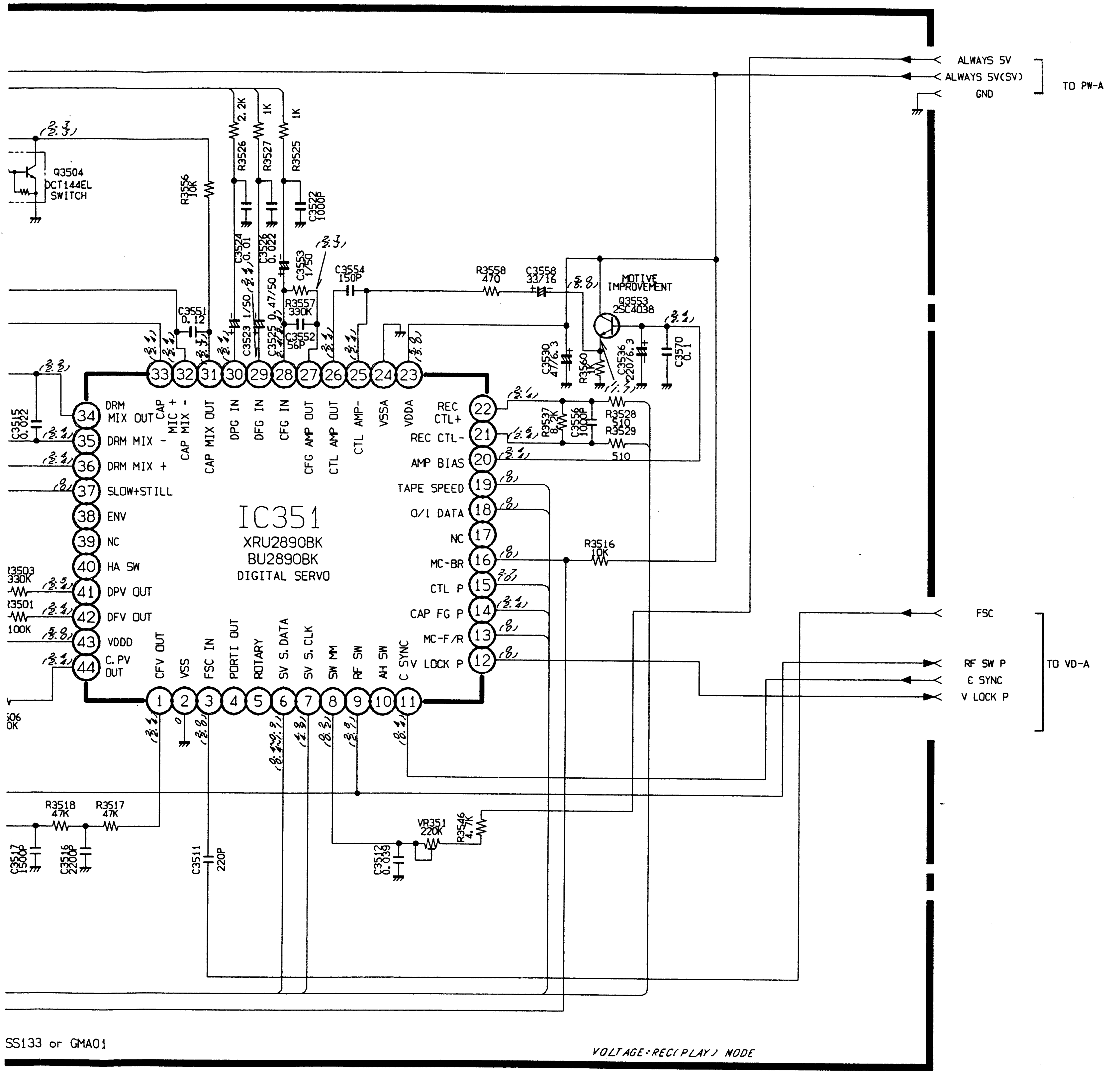
2-12. CP-1 BOARD (SV-A) SERVO


SV-A
S1-14210/TP2-EV
TO SY-A
SS+DRUM SHIFT
DRUM-VS
CAP-VS
C-VS CUT
D-PG
D-FG
C-FG
SV S.DATA
SV S.CLK
RF SW P
MC-F/R
CAP FG P
CTL P
MC-BR
0/1 DATA
TAPE SPEED
CTL -
CTL +
D3502
R3547 15K
Q3504 DCT144EL SWITCH
R3556 10K
R3526 2.2K
R3527 1K
R3525 1K
C3522 1000P
C3524 0.01
C3526 0.022
C3553 1/50
C3523 1/50
C3525 0.47/50
C3551 0.12
R3557 330K
C3552 56P
C3554 150P
R3558 470
C3558 33/16
MOTIVE IMPROVEMENT
Q3553 2SC4038
C3530 47/6.3
R3560
C3536 220/6.3
C3570 0.1
R3521 10K
C3513 0.068
R3520 330K
C3514 0.1
C3515 0.022
R3549 10K
R3550 8.2K
C3540 100P
R3537
C3556 1000P
R3528 510
R3529 510
IC351
XRU2890BK
BU2890BK
DIGITAL SERVO
DRM MIX OUT
DRM MIX -
DRM MIX +
SLOW+STILL
ENV
NC
HA SW
DPV OUT
DFV OUT
VDDD
C.PV OUT
CAP MIC +
CAP MIC -
CAP MIX OUT
DPG IN
DFG IN
CFG IN
CFG AMP OUT
CTL AMP OUT
CTL AMP-
VSSA
VDDA
REC CTL+
REC CTL-
AMP BIAS
TAPE SPEED
O/1 DATA
NC
MC-BR
CTL P
CAP FG P
MC-F/R
V LOCK P
CFV OUT
VSS
FSC IN
PORT1 OUT
ROTARY
SV S.DATA
SV S.CLK
SW MM
RF SW
AH SW
C SYNC
R3516 10K
R3505 15K
R3504 150K
R3503 330K
R3501 100K
C3505 22/16
C3503 0.015
C3502 6800P
R3502 100K
C3501 0.015
R3507 150K
C3506 6800P
R3506 220K
C3508 22/16
R3508 27K
R3518 47K
R3517 47K
C3517 1500P
C3516 2200P
C3511 220P
C3512 0.039
VR351 220K
R3546 4.7K
ALWAYS 5V
ALWAYS 5V(SV)
GND
TO PW-A
FSC
RF SW P
C SYNC
V LOCK P
TO VD-A

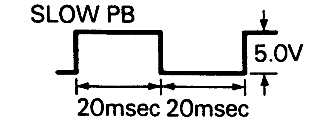
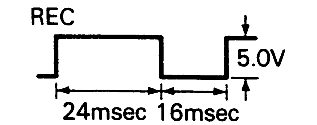
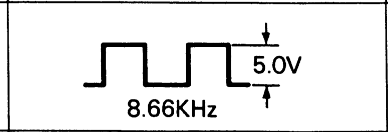
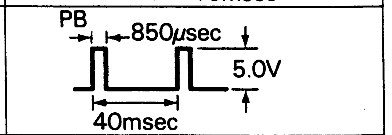
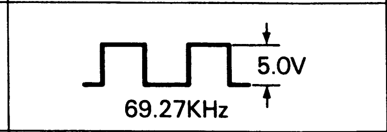
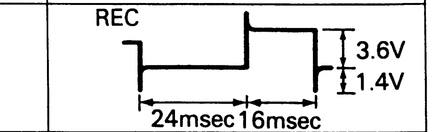
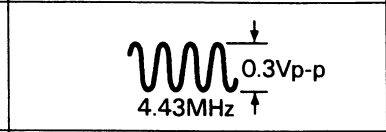
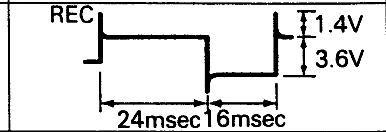
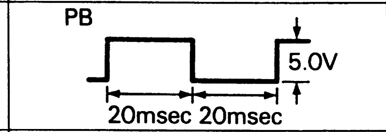
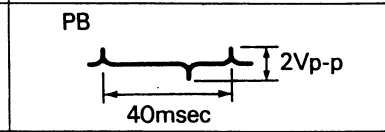
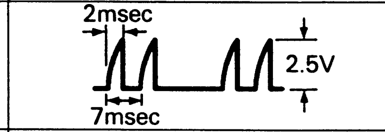
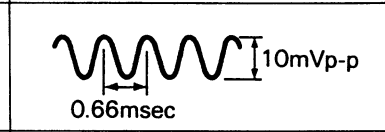
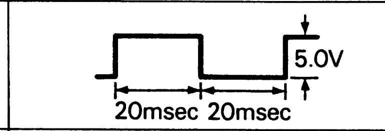
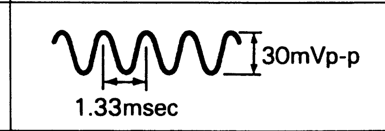
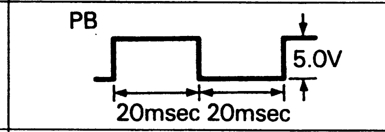
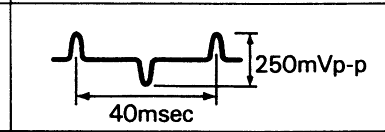
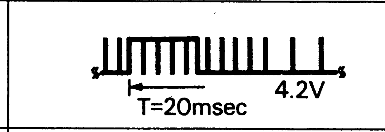
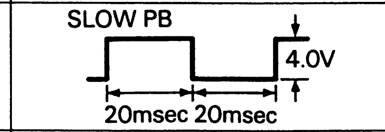
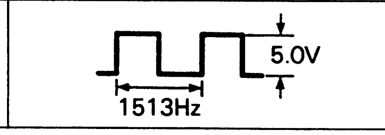
NOTE NOT SPECIFIED DIODES : 1SS133 or GMA01

VOLTAGE: REC(PLAY) MODE

2-12. CP-1 BOARD (SV-A) SERVO


ALWAYS 5V
ALWAYS 5V(SV)
GND
TO PW-A
FSC
RF SW P
C SYNC
V LOCK P
TO VD-A
Q3504
DCT144EL
SWITCH
IC351
XRU2890BK
BU2890BK
DIGITAL SERVO
DRM MIX OUT
DRM MIX -
DRM MIX +
SLOW+STILL
ENV
NC
HA SW
DPV OUT
DFV OUT
VDDD
C.PV OUT
CFV OUT
VSS
FSC IN
PORTI OUT
ROTARY
SV S.DATA
SV S.CLK
SW MM
RF SW
AH SW
C SYNC
V LOCK P
MC-F/R
CAP FG P
CTL P
MC-BR
NC
O/I DATA
TAPE SPEED
AMP BIAS
REC CTL-
REC CTL+
CAP MIC +
CAP MIC -
CAP MIX OUT
DPG IN
DFG IN
CFG IN
CFG AMP OUT
CTL AMP OUT
CTL AMP-
VSSA
VDDA
MOTIVE IMPROVEMENT
Q3553
2SC4038
R3556 10K
R3526 2.2K
R3527 1K
R3525 1K
C3522 1000P
C3524 0.01
C3526 0.022
C3553 1/50
C3554 150P
R3557 330K
C3552 56P
C3551 0.12
C3523 1/50
C3525 0.47/50
R3558 470
C3558 33/16
C3530 47/6.3
R3560
C3536 220/6.3
C3570 0.1
R3537 8.2K
C3556 1000P
R3528 510
R3529
510
R3516 10K
R3503 330K
R3501 100K
C3515 0.022
R3518 47K
R3517 47K
C3517 1500P
C3516 2200P
C3511 220P
VR351 220K
R3546 4.7K
C3512 0.039
SS133 or GMA01
VOLTAGE:REC(PLAY) MODE

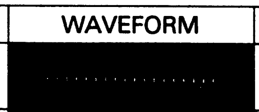
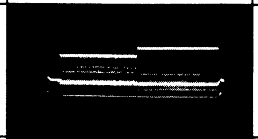
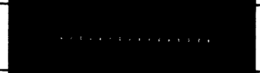
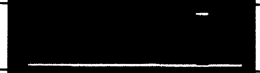
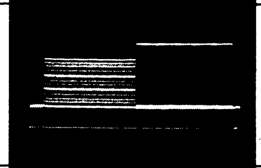
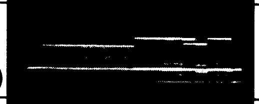
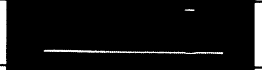
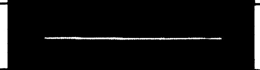
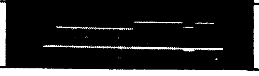
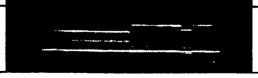
2-13. SERVO CIRCUIT WAVEFORMS (IC351:XRU2890 SERIES)

TEST LOCATION	WAVEFORM & MODE/LEVEL	TEST LOCATION	WAVEFORM & MODE/LEVEL
Pin 40 (H.A.SWITCHING)	 SLOW PB 5.0V 20msec 20msec	Pin 15 (CTL PULSE)	 REC 5.0V 24msec 16msec
Pin 42 (PWM)	 5.0V 8.66KHz	Pin 15 (CTL PULSE)	 PB 850μsec 5.0V 40msec
Pin 41, 44, 1 (PWM)	 5.0V 69.27KHz	Pin 21 (CTL HEAD-)	 REC 3.6V 1.4V 24msec 16msec
Pin 3 (FSC INPUT)	 0.3Vp-p 4.43MHz	Pin 22 (CTL HEAD+)	 REC 1.4V 3.6V 24msec 16msec
Pin 5 (ROTARY)	 PB 5.0V 20msec 20msec	Pin 26 (CTL AMP OUT)	 PB 2Vp-p 40msec
Pin 8 (D-PG MM)	 2msec 2.5V 7msec	Pin 28 (C-FG INPUT)	 10mVp-p 0.66msec
Pin 9 (RF SW PULSE)	 5.0V 20msec 20msec	Pin 29 (D-FG INPUT)	 30mVp-p 1.33msec
Pin 10 (AF SW PULSE)	 PB 5.0V 20msec 20msec	Pin 30 (D-PG INPUT)	 250mVp-p 40msec
Pin 11 (COMPOSITE SYNC INPUT)	 4.2V T=20msec	Pin 38 (ENV.SW INPUT)	 SLOW PB 4.0V 20msec 20msec
Pin 14 (C-FG PULSE)	 5.0V 1513Hz		

WF-S-TP4

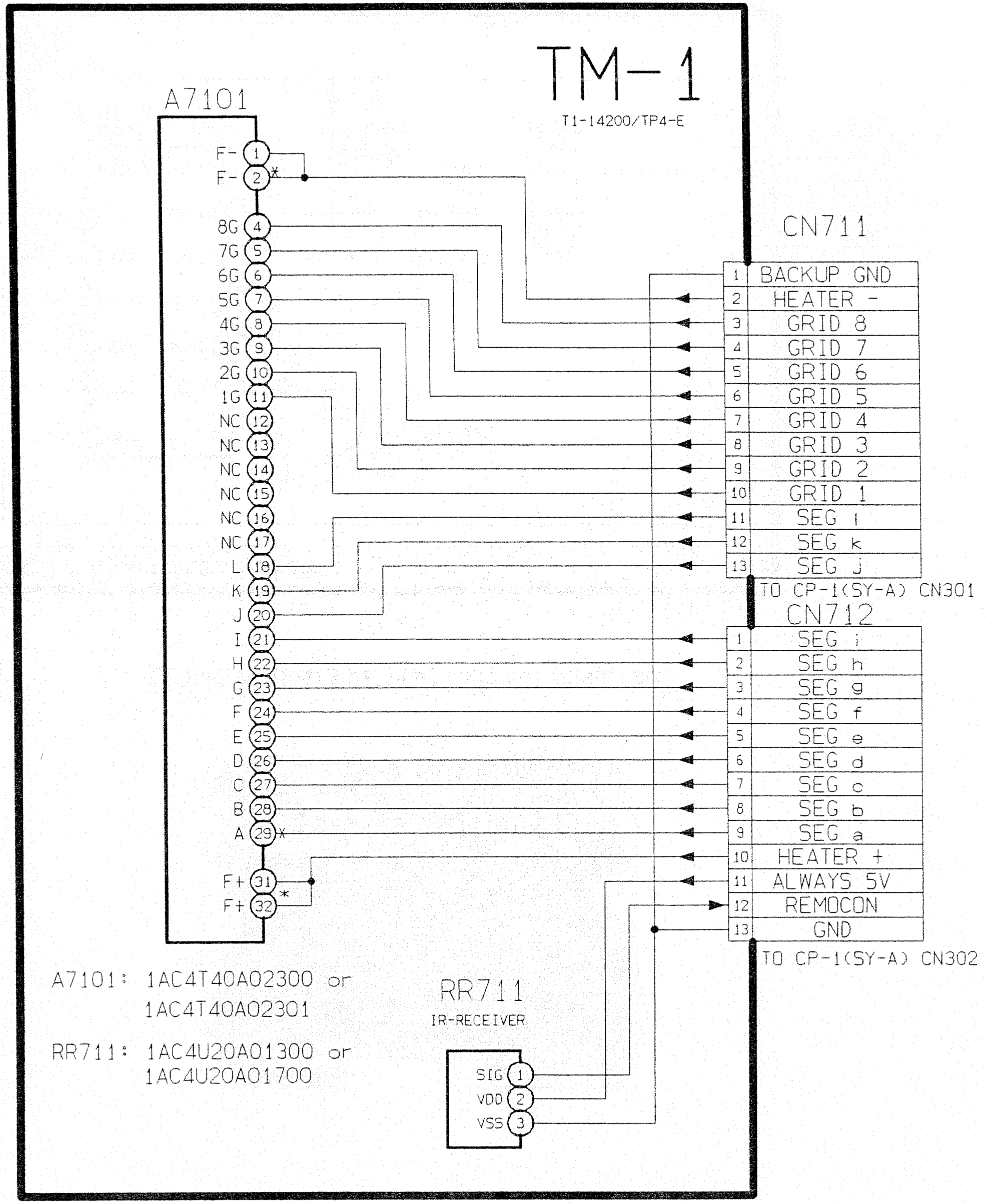
2-14. ON SCREEN (IC321) WAVEFORMS

(MODE: REC EE/ON SCREEN)

TEST LOCATION	WAVEFORM	LEVEL	TEST LOCATION	WAVEFORM	LEVEL
Pin 5 (17.7MHz X-TAL)		2Vp-p	Pin 19 (CV cr)		2Vp-p
Pin 6 (17.7MHz X-TAL)		3Vp-p			
Pin 14 (HALF TONE)		5Vp-p	Pin 20 (SYNC IN)		2Vp-p
Pin 16 (VIDEO OUT: WITH ON SCREEN)		2Vp-p			
Pin 14 (HALF TONE)		5Vp-p	Pin 23 (PD OUT)		4.5Vp-p
Pin 18 (VIDEO IN)		2Vp-p	Pin 16 (VIDEO OUT)		2Vp-p

WF-UFO-TP4

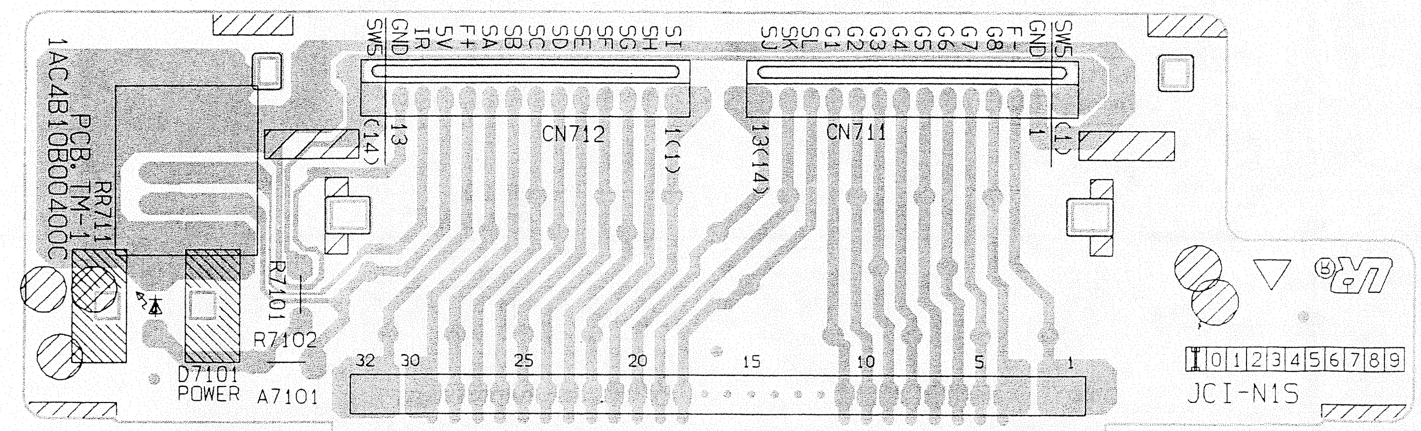
2-15. TM-1 BOARD DISPLAY (FLD)


TM-1
T1-14200/TP4-E
A7101
F- 1
F- 2
8G 4
7G 5
6G 6
5G 7
4G 8
3G 9
2G 10
1G 11
NC 12
NC 13
NC 14
NC 15
NC 16
NC 17
L 18
K 19
J 20
I 21
H 22
G 23
F 24
E 25
D 26
C 27
B 28
A 29
F+ 31
F+ 32
CN711
1 BACKUP GND
2 HEATER -
3 GRID 8
4 GRID 7
5 GRID 6
6 GRID 5
7 GRID 4
8 GRID 3
9 GRID 2
10 GRID 1
11 SEG l
12 SEG k
13 SEG j
TO CP-1(SY-A) CN301
CN712
1 SEG i
2 SEG h
3 SEG g
4 SEG f
5 SEG e
6 SEG d
7 SEG c
8 SEG b
9 SEG a
10 HEATER +
11 ALWAYS 5V
12 REMOCON
13 GND
TO CP-1(SY-A) CN302
RR711
IR-RECEIVER
SIG 1
VDD 2
VSS 3

A7101: 1AC4T40A02300 or
1AC4T40A02301

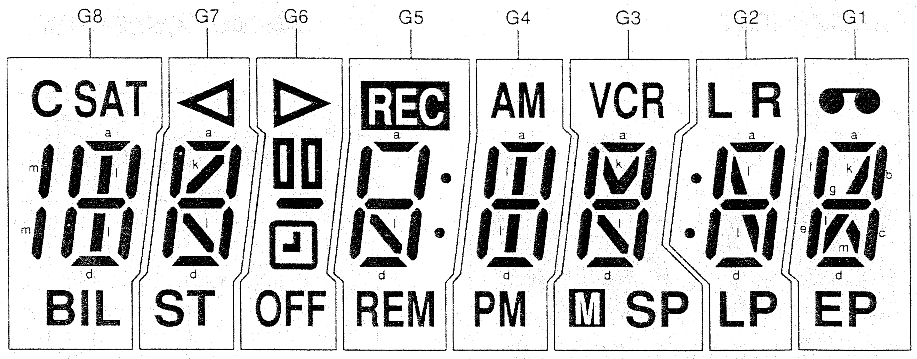
RR711: 1AC4U20A01300 or
1AC4U20A01700

2-16. TM-1 P.W.B.


1AC4B10B0040C
PCB TM-1
RR711
R7101
R7102
D7101
POWER
A7101
SW5 GND IR 5V F+ SA SB SC SD SE SF SG SH SI
SJ SK SL G1 G2 G3 G4 G5 G6 G7 G8 F- GND SW5
CN712
CN711
13 (14)
(1) 1
13(14)
1 (1)
32 30 25 20 15 10 5 1
I 0 1 2 3 4 5 6 7 8 9
JCI-N1S

2-17. A7101 DISPLAY (FLD) GRID/ANODE ASSIGNMENT DRAWING & TABLE

GRID & SEGMENT ASSIGNMENT

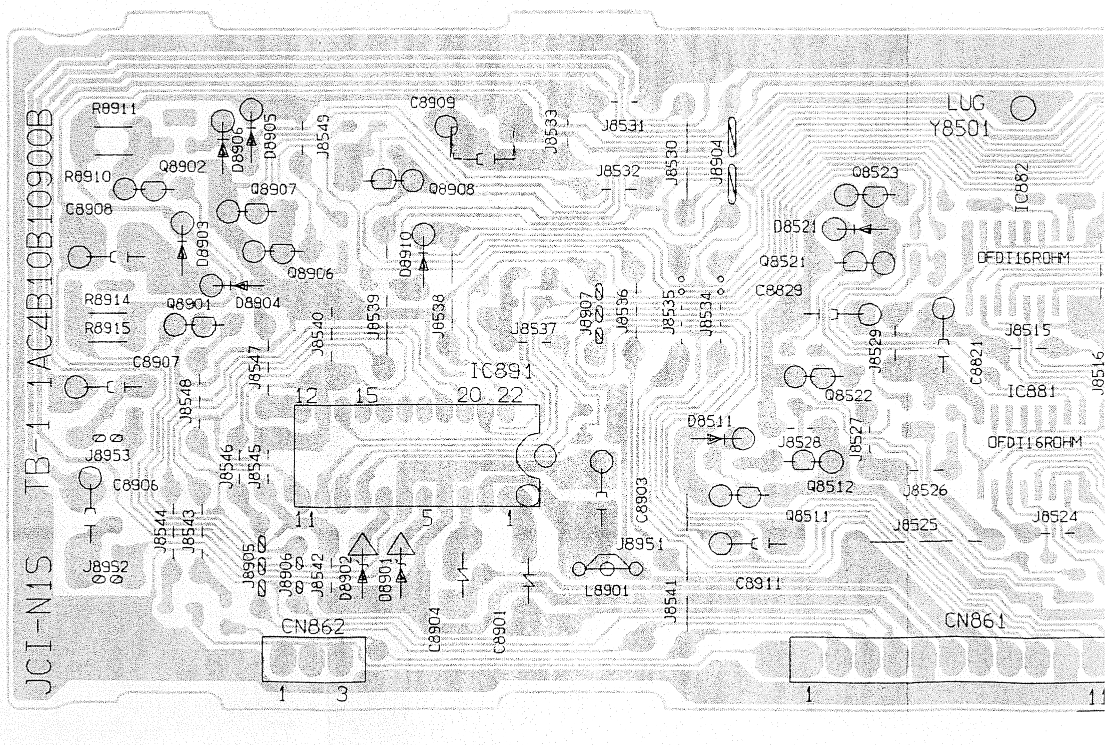

G8
G7
G6
G5
G4
G3
G2
G1
C SAT
REC
AM
VCR
L R
BIL
ST
OFF
REM
PM
M SP
LP
EP
a
b
c
d
e
f
g
h
i
j
k
l
m

ANODE CONNECTION

GRID / SEGMENT	G8	G7	G6	G5	G4	G3	G2	G1
a	C	◁	▷	REC	AM	VCR	L	🖭
b	SAT	k	II	—	—	k	R	k
c	a	a	▬	a	a	a	a	a
d	b	b	⏲	b	b	b	b	b
e	c	c	—	c	c	c	c	c
f	d	d	—	d	d	d	d	d
g	e	e	—	e	e	e	e	e
h	f	f	—	f	f	f	f	f
i	g	g	—	g	g	g	g	g
j	l	l	—	l	l	l	l	l
k	m	—	—	:	—	M	:	m
l	BIL	ST	OFF	REM	PM	SP	LP	EP

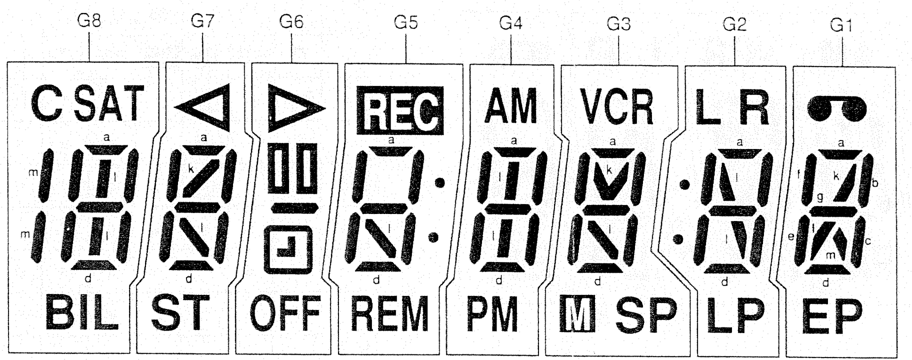
GR-02300

2-18. TB-1 P.W.B.


TB-1 1AC4B10B1090B
JCI-N1S
R8911
R8910
C8908
Q8902
Q8907
Q8908
C8909
Q8906
Q8901
D8904
R8914
R8915
C8907
C8906
J8953
J8952
IC891
CN862
1 3
L8901
C8911
J8951
C8903
C8904
C8901
D8901
D8902
J8531
J8532
J8533
J8530
J8904
J8537
LUG
Y8501
Q8523
D8521
Q8521
C8829
IC882
OFDI16ROHM
J8515
IC881
OFDI16ROHM
D8511
Q8522
J8528
J8527
Q8512
Q8511
J8526
J8525
J8524
CN861
1

2-17. A7101 DISPLAY (FLD) GRID/ANODE ASSIGNMENT DRAWING & TABLE

GRID & SEGMENT ASSIGNMENT

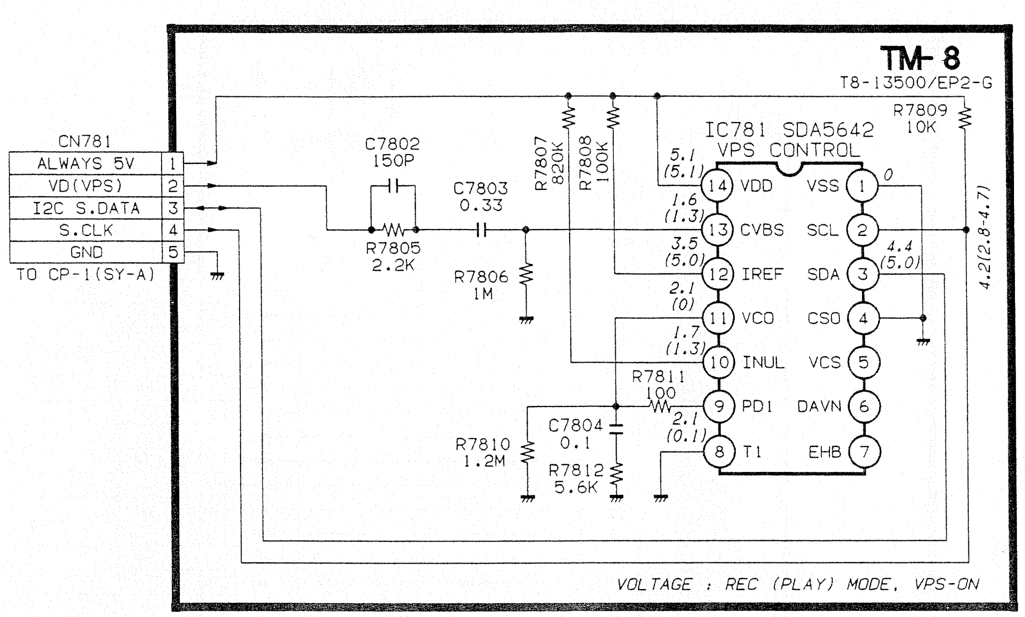

G8
G7
G6
G5
G4
G3
G2
G1
C SAT
◁
▷
REC
AM
VCR
L R
BIL
ST
OFF
REM
PM
M SP
LP
EP
a
b
c
d
k
l
m

ANODE CONNECTION

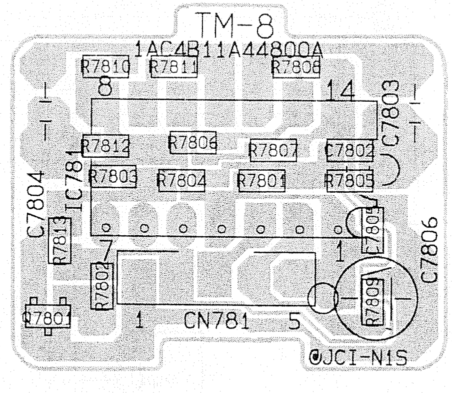
GRID / SEGMENT	G8	G7	G6	G5	G4	G3	G2	G1
a	C	◁	▷	REC	AM	VCR	L	●●
b	SAT	k	▯▯	—	—	k	R	k
c	a	a	━	a	a	a	a	a
d	b	b	⊡	b	b	b	b	b
e	c	c	—	c	c	c	c	c
f	d	d	—	d	d	d	d	d
g	e	e	—	e	e	e	e	e
h	f	f	—	f	f	f	f	f
i	g	g	—	g	g	g	g	g
j	l	l	—	l	l	l	l	l
k	m	—	—	:	—	M	:	m
l	BIL	ST	OFF	REM	PM	SP	LP	EP

GR-02300

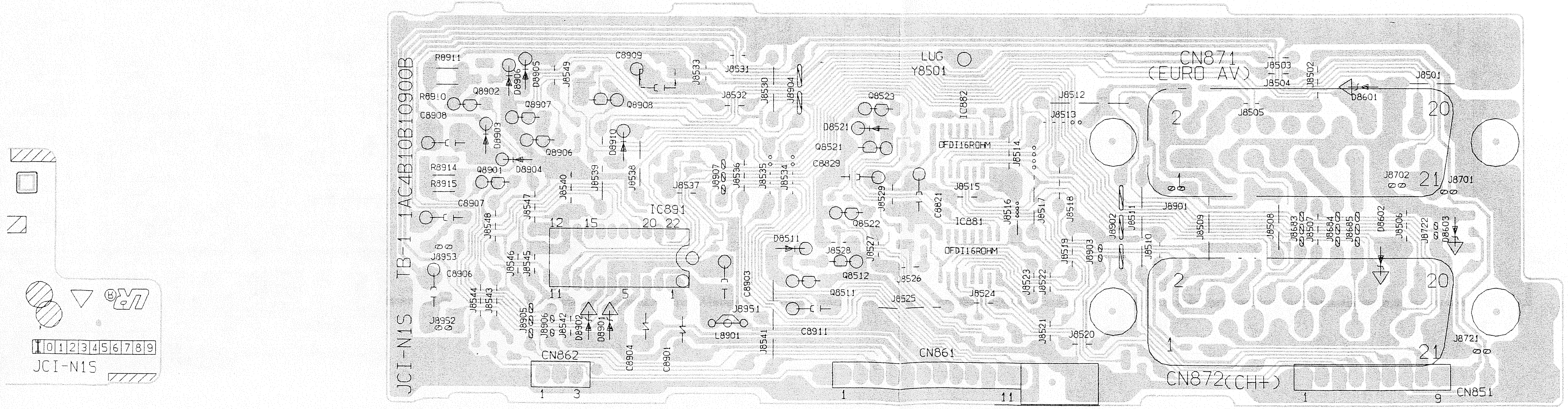
2-19. TM-8 BOARD VPS (VCR3714VPS/SV ONLY)


TM-8
T8-13500/EP2-G
CN781
ALWAYS 5V 1
VD(VPS) 2
I2C S.DATA 3
S.CLK 4
GND 5
TO CP-1(SY-A)
C7802 150P
R7805 2.2K
C7803 0.33
R7806 1M
R7807 820K
R7808 100K
R7809 10K
IC781 SDA5642
VPS CONTROL
5.1 (5.1) 14 VDD
1.6 (1.3) 13 CVBS
3.5 (5.0) 12 IREF
2.1 (0) 11 VCO
1.7 (1.3) 10 INUL
R7811 100
2.1 (0.1) 9 PD1
8 T1
VSS 1 0
SCL 2
SDA 3 4.4 (5.0)
CSO 4
VCS 5
DAVN 6
EHB 7
4.2(2.8-4.7)
R7810 1.2M
C7804 0.1
R7812 5.6K
VOLTAGE : REC (PLAY) MODE, VPS-ON

2-20. TM-8 P.W.B. (VCR3714VPS/SV ONLY)

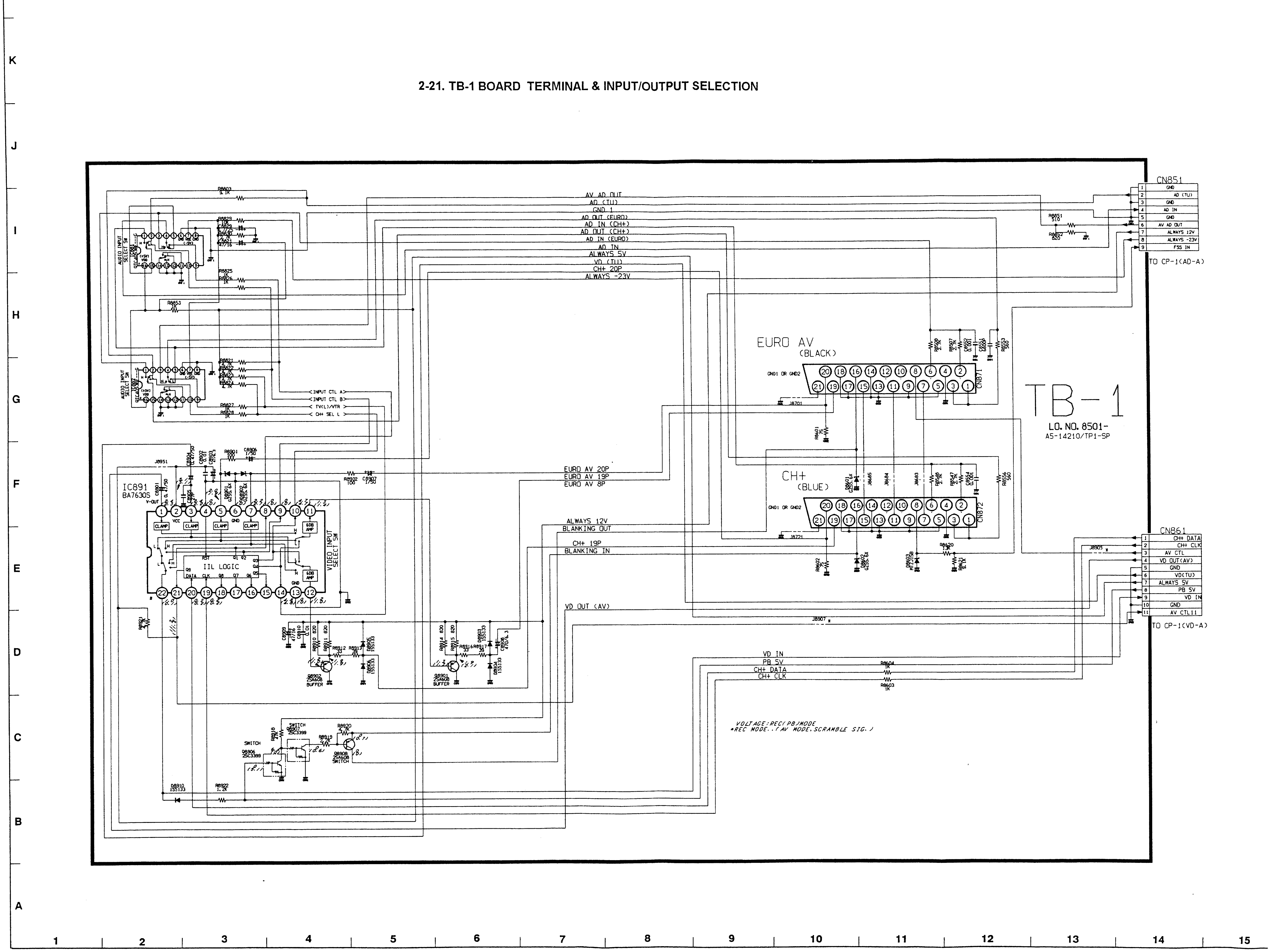

TM-8
1AC4B11A44800A
R7810
R7811
R7808
8
14
C7803
R7812
R7806
R7807
C7802
R7803
R7804
R7801
R7805
IC781
C7804
R7813
C7806
R7802
R7809
1 CN781 5
JCI-N1S

2-18. TB-1 P.W.B.


TB-1 1AC4B10B1090B
JCI-N1S
R8911
R8910
C8908
R8914
R8915
C8907
J8953
C8906
J8952
Q8902
Q8907
Q8906
Q8901
D8904
D8903
D8906
D8905
C8909
Q8908
J8549
J8533
J8531
J8532
J8530
J8904
J8540
J8539
J8538
J8537
IC891
J8547
J8548
J8546
J8545
J8544
J8543
J8905
J8906
J8542
D8902
D8901
CN862
C8904
C8901
C8903
J8951
L8901
J8541
J8907
J8536
J8535
J8534
D8511
J8528
Q8512
Q8511
C8911
LUG Y8501
Q8523
D8521
Q8521
C8829
J8529
Q8522
J8527
J8526
J8525
C8821
IC881
OFDI16ROHM
IC882
J8512
J8513
J8514
J8515
J8516
J8517
J8518
J8519
J8523
J8522
J8524
J8521
J8520
CN861
J8902
J8511
J8903
J8510
J8901
J8509
CN871 (EURO AV)
J8503
J8504
J8502
J8501
J8505
D8601
J8508
J8683
J8507
J8684
J8685
D8602
J8506
J8722
D8603
J8702
J8701
J8721
CN872(CH+)
CN851
0 1 2 3 4 5 6 7 8 9
JCI-N1S

8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22

2-21. TB-1 BOARD TERMINAL & INPUT/OUTPUT SELECTION



K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
AV AD OUT
AD (TU)
GND 1
AD OUT (EURO)
AD IN (CH+)
AD OUT (CH+)
AD IN (EURO)
AD IN
ALWAYS 5V
VD (TU)
CH+ 20P
ALWAYS -23V
CN851
1 GND
2 AD (TU)
3 GND
4 AD IN
5 GND
6 AV AD OUT
7 ALWAYS 12V
8 ALWAYS -23V
9 FSS IN
TO CP-1(AD-A)
AUDIO INPUT SELECT SW
IC881
IC882
<INPUT CTL A>
<INPUT CTL B>
< TV(L)/VTR >
< CH+ SEL L >
EURO AV
(BLACK)
CN871
GND1 OR GND2
CH+
(BLUE)
CN872
TB-1
LO. NO. 8501-
A5-14210/TP1-SP
IC891
BA7630S
V-OUT
VCC
GND
CLAMP
6DB AMP
IIL LOGIC
RST
DATA
CLK
VIDEO INPUT SELECT SW
EURO AV 20P
EURO AV 19P
EURO AV 8P
ALWAYS 12V
BLANKING OUT
CH+ 19P
BLANKING IN
VD OUT (AV)
CN861
1 CH+ DATA
2 CH+ CLK
3 AV CTL
4 VD OUT(AV)
5 GND
6 VD(TU)
7 ALWAYS 5V
8 PB 5V
9 VD IN
10 GND
11 AV CTL11
TO CP-1(VD-A)
J8905 *
J8907 *
VD IN
PB 5V
CH+ DATA
CH+ CLK
Q8901 2SA608 BUFFER
Q8902 2SA608 BUFFER
Q8906 2SC3399 SWITCH
Q8907 2SC3399 SWITCH
Q8908 2SA608 SWITCH
D8910 1SS133
R8922 1.2K

VOLTAGE:REC(PB)MODE
*REC MODE..(AV MODE.SCRAMBLE SIG.)

V10071

NOKIA
CONSUMER ELECTRONICS

Service-Manual

VR

1993

NOKIA

VCR 3704, 3704 EE, 3704 VPS
VCR 3714 VPS/SV, 3714 SV
VCR 3724 IR/VP, 3724 UK/VP
VCR 3744 VPS/SV, 3744 SV, 3744 UK/VP
VCR 3764 HIFI N, 3764 HIFI VPS
VCR 3784 HIFI N/SV, 3784 HIFI UK/VP
VCR 3784 HIFI VPS/SV, 3784 HIFI IR/VP

SALORA

VCR 624
VCR 824 SV
VCR 914 HIFI N
VCR 924 HIFI N/SV

LUXOR

VCR 4704
VCR 4744 SV
VCR 4764 HIFI N
VCR 4784 HIFI N/SV

Mechanik-Justagen

Schaltbilder, Leiterplatten, Ersatzteile-Liste, Elektrischer Abgleich, siehe nächste Seite.

Bei Reparaturen gültige Sicherheitsvorschriften beachten!

Mechanical adjustments

Circuit diagrams, P. C. B., spare parts list, electrical alignment, see next page.

Service and repair work to be performed only in accordance with existing safety regulations!

Mécanique ajustages

Schémas, circuits imprimés, liste des pièces détachées, alignement, voir page suivante.

Pendant le dépannage, respecter les régulations du sécurité!

Änderungen vorbehalten Modifications reserved Modifications réservées

6611 74 46 (9335) SA

Liste der Service-Manuale **List of Service Manuals** **Liste des manuals**	Elektrischer Abgleich, Schaltbilder, Leiterplatten, Ersatzteile-Liste	Mechanik-Justagen
Modell **Model** **Modèle**	Electrical alignment, circuit diagram, P.C.B., spare parts list Alignment, schèmas circ. imprimès, liste des pièces dètachèes **No.**	Mechanical adjustments Mèchanique ajustages **No.**
NOKIA VCR 3704 VPS NOKIA VCR 3704 NOKIA VCR 3704 EE	6611 74 35	6611 74 46 **NOTE!** Manual 6611 74 46 is only a supplement for the '93 models. The Basic Manual is 6611 77 06. (1990).
LUXOR VCR 4704 SALORA VCR 624	6611 74 36	
NOKIA VCR 3744 VPS/SV NOKIA VCR 3744 SV NOKIA VCR 3744 UK/VP	6611 74 37	
LUXOR VCR 4744 SV SALORA VCR 824 SV	6611 74 38	
NOKIA VCR 3764 HIFI VPS NOKIA VCR 3764 HIFI N	6611 74 39	
LUXOR VCR 4764 HIFI N SALORA VCR 914 HIFI N	6611 74 40	
NOKIA VCR 3784 HIFI VPS/SV NOKIA VCR 3784 HIFI N/SV NOKIA VCR 3784 HIFI UK/VP	6611 74 41	
LUXOR VCR 4784 HIFI N/SV SALORA VCR 924 HIFI N/SV	6611 74 42	
NOKIA VCR 3724 UK/VP NOKIA VCR 3724 IR/VP	6611 74 43	
NOKIA VCR 3714 VPS/SV NOKIA VCR 3714 SV	6611 74 44	
NOKIA VCR 3784 HIFI IR/VP	6611 74 45	

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2. Sections changed from P90 Mechanism 5
    - 2-2. Description of Mechanism Drive 5
    - 4-1-3. Service jigs 9
    - 4-2-2. Connection Method 10
    - 5-2-2. Gear Bracket Ass'y 11
    - 5-2-4. Cassette Drive Gear (left) 12
    - 5-6. Pinch Roller Pressure Mechanism 13
    - 5-4. Tape Loading Mechanism 14
    - 5-8-4. Reel Pulley and Friction Gear Ass'y 16
    - 5-8-5. COMPL Clutch 17
    - 5-10. Fixed Guide, FE Head Lever Ass'y 18
    - 5-10-3. Exit side Fixed Guide 19
    - 5-11. Drum Section 20
    - 5-13. Auto Head Cleaner Mechanism Removal/Reassembly 21

1. OUTLINE OF '93 MIDI MID-MOUNT MECHANISM

The '93 Midi mid-mount mechanism is used for video tape recorders shipped as new products of 1993. The '93 Midi mid-mount mechanism has the same basic structures as the P90 mechanism shipped in 1990 except the following. As this manual omits the description of parts which are the same as those of P90, please refer to the P90 Mechanism Basic Manual (No. 6611 77 06).

(1) Some models have new reel drive system parts (supply reel table, take up reel table, reel gear (S), reel gear (T), COMPL idler clutch). As these are not interchangeable with the older ones, be sure to check the parts list when replacing them.

(2) The main cam gear, load rack and load gear (T) have been replaced with new ones to further simplify the tape loading mechanism. Therefore, the load cam lever of the old mechanism is not required. The new tape loading mechanism is shown in the figure 2-1.

(3) The MC-2 and MC-3 boards between the loading motor and system control circuit have been replaced with new ones. The MC-2 board incorporated in the HiFi model is different from that incorporated in the MONAURAL model. Therefore when using the mode selector (VHJ-0050) of the service tool, each model will require its own relay board. The MC-2 board used in the HiFi model and MONAURAL model of the 92 Midi mid-mount mechanism can be differentiated as follows.
【HiFi model】
The gilt side of its MC-2 board is marked "T-HiFi" in big letters. Its CN811 connector has 24 pins. VHJ-0092 is used as the relay board.
【MONAURAL model】
The gilt side of its MC-2 board is marked "T-MONO" in big letters. Its CN811 connector has 29 pins. VHJ-0094 is used as the relay board.

(4) The pulley bracket is no longer used and the special screw has been employed.

(5) The shape of the clutch lever assembly has been partially changed and the damper is no longer used.

(6) The shape of the front helical gear of the loading motor has been partially changed and the washer is no longer used.

(7) The 4 screws for mounting the gear bracket assembly of the cassette holder mechanism have been reduced to 3 screws.

(8) Some models do not have the impedance roller.

(9) The height adjustment of the exit side fixed guide no longer required as the precision of the tape running system has been heightened.

(10) The form of MC-1 and MC-4 board connector (CN801) near the reel drive part has been changed.

(11) The auto head cleaner mechanism is used for cleaning the video head automatically during loading and unloading.

[Page 6]

2. SECTIONS CHANGED FROM P90 MECHANISM

The page number within the parenthesis above each title mentioned later indicates the page number of the P90 Mechanism Basic Manual (No. 6611 77 06). Replace the page numbers with those in the parenthesis on usage.

2-2. DESCRIPTION OF MECHANISM DRIVE

To realize the thin type mechanism, a loading motor and two pieces of cam (MAIN CAM GEAR and the MODE CAM GEAR) to be driven by the said motor are mounted on the upper part of the capstan motor, that was a dead space in the conventional mechanisms hitherto available, with a view to optimization of parts mounting layout. (Fig. 2-1 and Fig. 2-2.)

- Some models do not have the impedance roller and the roller cleaner ass'y.
- The shaded sections are different from P90 mechanism.

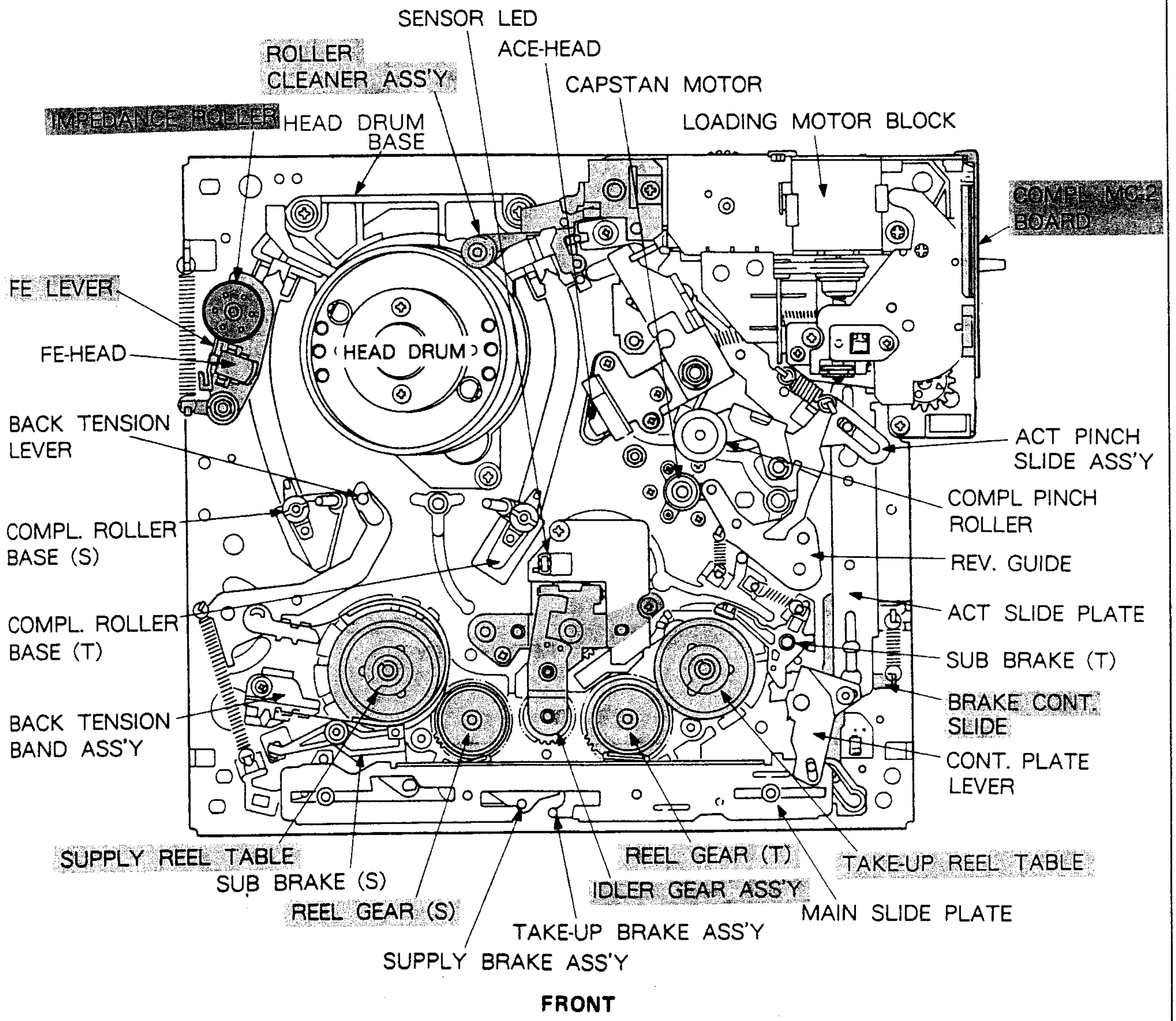

SENSOR LED
ROLLER CLEANER ASS'Y
ACE-HEAD
CAPSTAN MOTOR
IMPEDANCE ROLLER
HEAD DRUM BASE
LOADING MOTOR BLOCK
COMPL. MC-2 BOARD
FE LEVER
HEAD DRUM
FE-HEAD
BACK TENSION LEVER
COMPL. ROLLER BASE (S)
COMPL. ROLLER BASE (T)
BACK TENSION BAND ASS'Y
ACT PINCH SLIDE ASS'Y
COMPL PINCH ROLLER
REV. GUIDE
ACT SLIDE PLATE
SUB BRAKE (T)
BRAKE CONT. SLIDE
CONT. PLATE LEVER
SUPPLY REEL TABLE
SUB BRAKE (S)
REEL GEAR (S)
REEL GEAR (T)
IDLER GEAR ASS'Y
TAKE-UP REEL TABLE
MAIN SLIDE PLATE
TAKE-UP BRAKE ASS'Y
SUPPLY BRAKE ASS'Y
FRONT

Fig. 2-1. Top View of Mechanism (Initial mode)

- Some models do not have the capstan soft brake.
- The shaded sections are different from P90 mechanism.

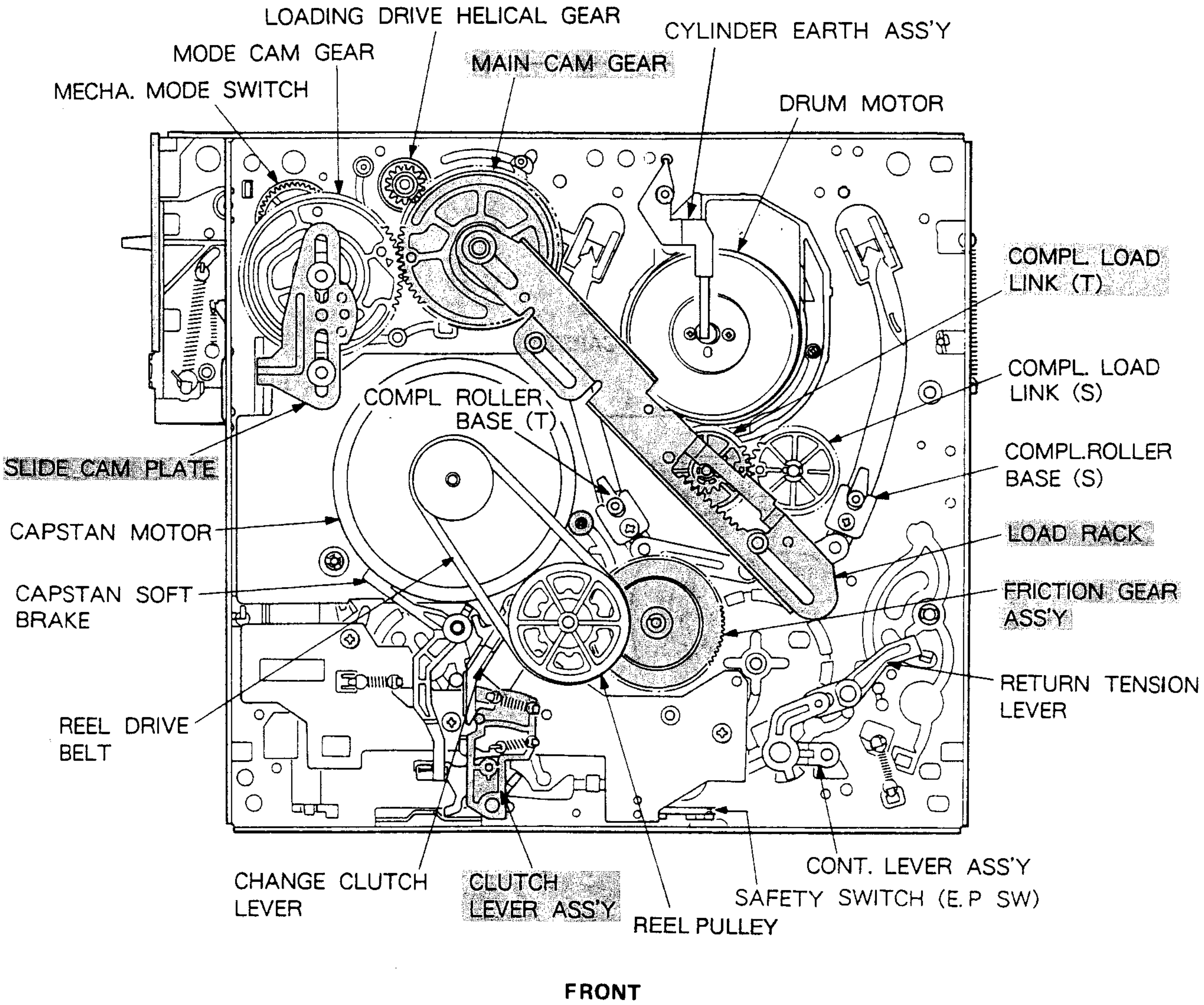

LOADING DRIVE HELICAL GEAR
CYLINDER EARTH ASS'Y
MODE CAM GEAR
MAIN CAM GEAR
MECHA. MODE SWITCH
DRUM MOTOR
COMPL. LOAD LINK (T)
COMPL. LOAD LINK (S)
COMPL ROLLER BASE (T)
COMPL.ROLLER BASE (S)
SLIDE CAM PLATE
CAPSTAN MOTOR
LOAD RACK
FRICTION GEAR ASS'Y
CAPSTAN SOFT BRAKE
RETURN TENSION LEVER
REEL DRIVE BELT
CONT. LEVER ASS'Y
CHANGE CLUTCH LEVER
CLUTCH LEVER ASS'Y
SAFETY SWITCH (E.P SW)
REEL PULLEY
FRONT

Fig. 2-2. Bottom View of Mechanism (Initial mode)

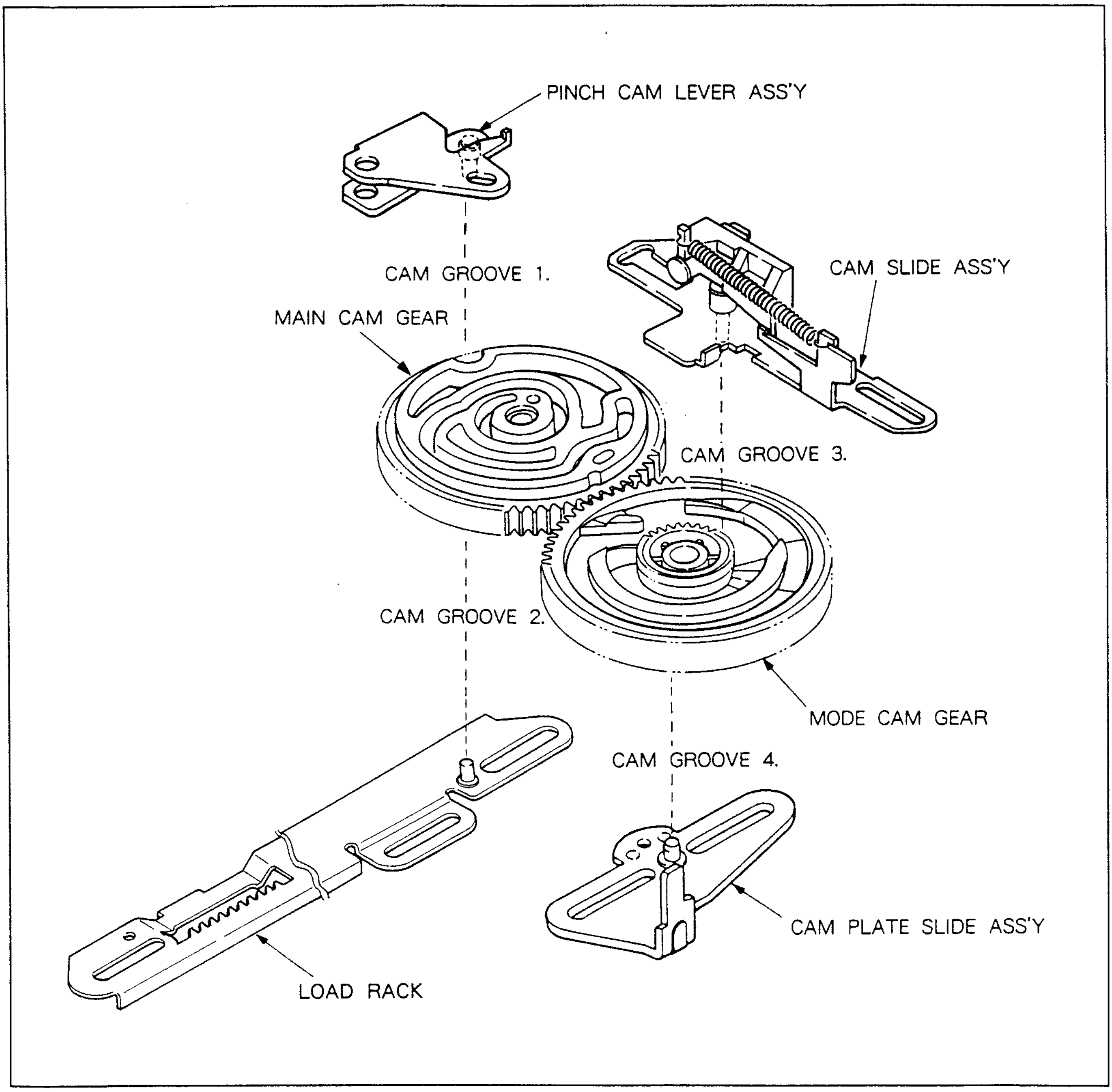

PINCH CAM LEVER ASS'Y
CAM GROOVE 1.
CAM SLIDE ASS'Y
MAIN CAM GEAR
CAM GROOVE 3.
CAM GROOVE 2.
MODE CAM GEAR
CAM GROOVE 4.
CAM PLATE SLIDE ASS'Y
LOAD RACK

Fig. 2-4. View of Cams Construction

(1) Tape Loading Mechanism

The tape loading mechanism is compactly designed with use of a LOAD RACK for loading by drive from the before-mentioned MAIN CAMs with CAM GROOVE 2. The LOAD RACK is laid on the dead space in between the DD capstan motor and the head motor for effective space utilization. (Fig. 6-2-5)
The process from tape pull-out upon loading to contact of the leading guide section with the stopper of drum base and press-fitting under tension of spring is guided and driven in such a manner that the rod is drawn inward from the outer circumferential direction of the CAM GROOVE 2, thereby reducing the load torque (PV value) to the CAM GROOVE. And, the load of the loading motor is minimized to enhance reliability.

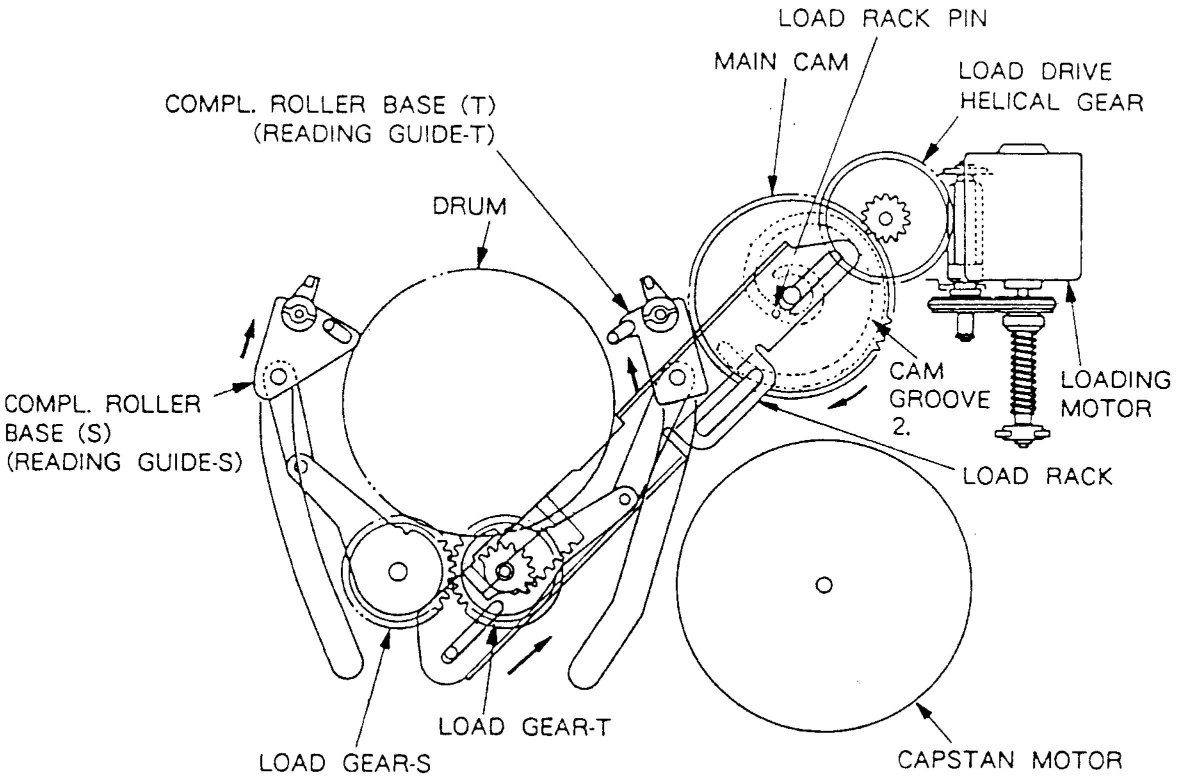

LOAD RACK PIN
MAIN CAM
LOAD DRIVE HELICAL GEAR
COMPL. ROLLER BASE (T) (READING GUIDE-T)
DRUM
COMPL. ROLLER BASE (S) (READING GUIDE-S)
CAM GROOVE 2.
LOADING MOTOR
LOAD RACK
LOAD GEAR-T
LOAD GEAR-S
CAPSTAN MOTOR

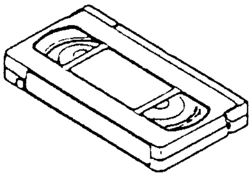
Fig. 2-5. Construction of Tape Loading Mechanism

[Page 30]

4-1-3. Service Jigs

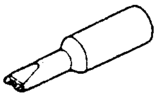
No.	Jig	Jig No.	Remarks
1	Alignment tape	VHJ-0008	SP color bar, 1kHz (normal)
2	Alignment tape	VHJ-0009	SP monoscope, 7kHz (normal)
3	Alignment tape	VHJ-0052	LP monoscope, 3kHz (normal)
4	Eccentric screwdriver	VHJ-0003	For tape path adjustment
5	Nut box	VHJ-0048	For fixed guide removal
6	Torque gauge	VHJ-0004	For reel take-up torque measurement
7	Cassette torquemeter	VHJ-0016	For back tension torque measurement
8	Position adjustment gauge	VHJ-0049	For position adjustment
9	Torque gauge screwdriver	VHJ-0014	For screw fastening torque adjustment
10	3mm dia. bit for torque screwdriver	VHJ-0045	Spare bit for the torque gauge screwdriver
11	Video head removing tool	VHJ-0041	For upper drum removal
12	Cassette stand plate gauge	VHJ-0001	For reel height adjustment
13	Mode selector and 26-pin flexible flat cable (VHJ-0064)	VHJ-0050	For mechanism mode selection and for connecting mode selector
14	26-pin flexible flat cable	VHJ-0064	Spare cable for mode selector
15	Mode selector relay board	VHJ-0092	Relay board for mode selector (For HiFi model)
16	Mode selector relay board	VHJ-0094	Relay board for mode selector (For monaural model)
17	REV guide lever removing tool	VHJ-0073	REV guide lever removal

VHJ-0008, VHJ-0009, VHJ-0052



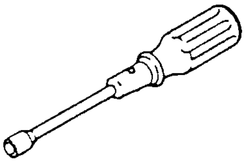
No. 1, 2, 3

VHJ-0003



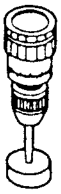
No. 4

VHJ-0048



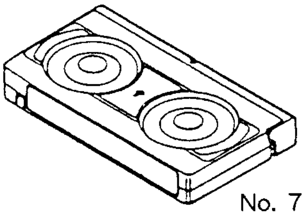
No. 5

VHJ-0004



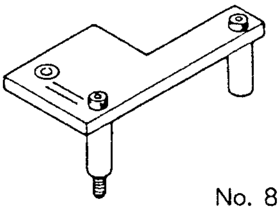
No. 6

VHJ-0016



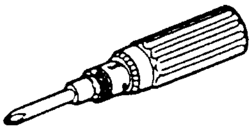
No. 7

VHJ-0049



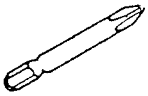
No. 8

VHJ-0014



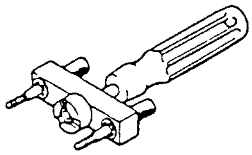
No. 9

VHJ-0045



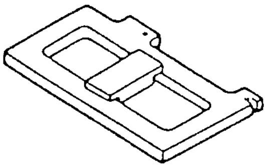
No. 10

VHJ-0041



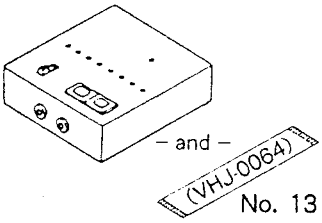
No. 11

VHJ-0001



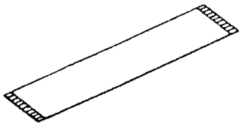
No. 12

VHJ-0050



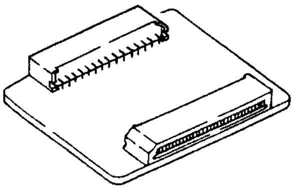
No. 13

VHJ-0064



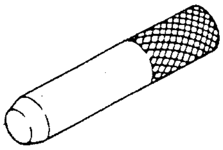
No. 14

VHJ-0092, VHJ-0094



No. 15, 16

VHJ-0073



No. 17

[Page 32]

4-2-2. Connection Method (See Fig. 4-2-2)

The relay board in the Hifi model is different from that used in the monaural model. The gilt side of the MC-2 board of the HiFi model is marked "T-HiFi" while that of the monaural model is marked "T-MONO". Use the following exclusive relay board for each.

[For HiFi model]

NOKIA: ***VCR3764 HIFI N, 3764 HIFI VPS, 3784 HIFI N/SV, 3784 HIFI UK/VP, 3784 HIFI VPS/SV, 3784 HIFI IR/VP***
LUXOR: ***VCR4764 HIFI N, 4784 HIFI N/SV***
SALORA: ***VCR914 HIFI N, 924 HIFI N/SV, 924 HIFI SV***
FINLUX: ***VR6550 HIFI UK/VP***

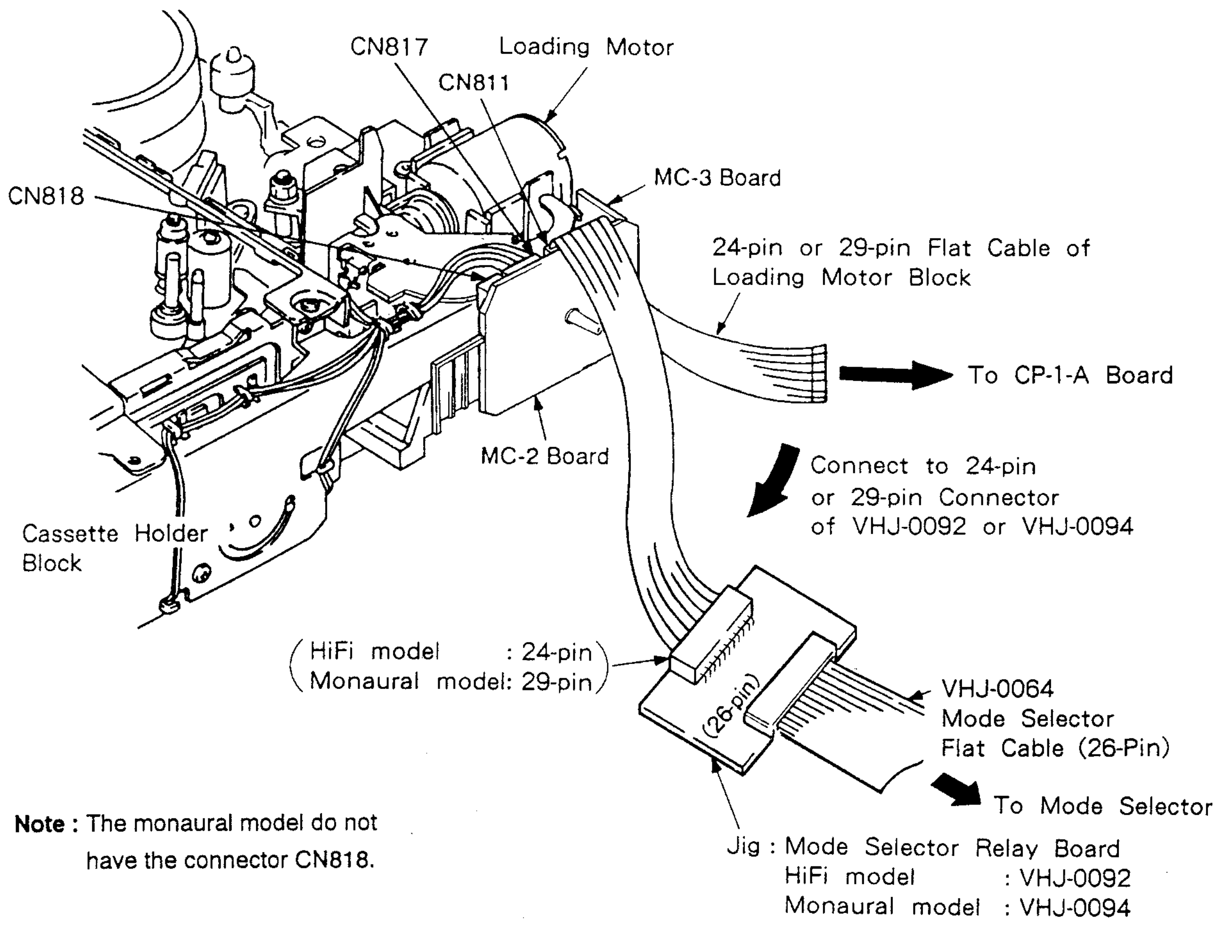
1) Remove the 24-pin flat cable extending from the COMPL MC-2 board connector (CN811) from the connector of the system control circuit board, and connect it to the 24-pin connector of the mode selector relay board (VHJ-0092).
2) Connect the 26-pin flat cable (VHJ-0064) of the mode selector (VHJ-0050) provided between the mode selector body and the 26-pin connector of the mode selector relay board (VHJ-0092).

[For monaural model]

NOKIA: ***VCR3704, 3704EE, 3704VPS, 3724SV, 3724UK/VP, 3734IR/VP, 3744SV, 3744UK/VP, 3744VPS/V***
LUXOR: ***VCR4704, 4744SV***
SALORA: ***VCR624, 824SV***
FINLUX: ***VR6350UK/VP***

1) Remove the 29-pin flat cable extending from the COMPL MC-2 board connector (CN811) from the connector of the system control circuit board, and connect it to the 29-pin connector of the mode selector relay board (VHJ-0094).
2) Connect the 26-pin flat cable (VHJ-0064) of the mode selector (VHJ-0050) provided between the mode selector body and the 26-pin connector of the mode selector relay board (VHJ-0094).

Note: Care should be taken to avoid mistaking the direction of the contacting side when connecting the flexible flat cable.


CN817
Loading Motor
CN811
CN818
MC-3 Board
24-pin or 29-pin Flat Cable of Loading Motor Block
To CP-1-A Board
MC-2 Board
Connect to 24-pin or 29-pin Connector of VHJ-0092 or VHJ-0094
Cassette Holder Block
(HiFi model : 24-pin
Monaural model: 29-pin)
(26-pin)
VHJ-0064 Mode Selector Flat Cable (26-Pin)
To Mode Selector
Jig : Mode Selector Relay Board
HiFi model : VHJ-0092
Monaural model : VHJ-0094

Note : The monaural model do not have the connector CN818.

Fig. 4-2-2. Connection

[Page 36]

5-2-2. Gear Bracket Ass'y (See Fig. 5-2-2.)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in 5-2-1.
2) Remove the three screws ①, then remove the GEAR BRACKET ASS'Y ② as shown in Fig. A.
3) Remove the E ring ③, then remove the LOCK GEAR ④, the PINION LEVER ASS'Y ⑤, the PINION GEAR ⑥ and the RACK ⑦, in that order.

2. Remounting

1) Apply grease to the shaft ⑧ and the two pins ⑨ of the GEAR BRACKET ASS'Y.
2) Apply grease to the pin ⑩ of the PINION LEVER ASS'Y.
3) Apply grease to the toothed part of the RACK ⑦.
4) Fit the RACK ⑦ onto the two pins ⑨. Align the positioning alignment hole ⑪ to the positioning alignment hole ⑫ of the GEAR BRACKET.
5) Mount the PINION GEAR ⑥, PINION LEVER ASS'Y ⑤, and LOCK GEAR ④ in the shaft ⑧ in the order mentioned.
   Align the positioning alignment holes ⑬ of PINION GEAR and LOCK GEAR with the positioning alignment hole ⑪ of RACK at that time.
6) Mount the E ring ③ onto the shaft ⑧.
7) Set the GEAR BRACKET ASS'Y ② to the dowel and mount it using three screws ①.
   Align the positioning alignment hole Ⓐ of the IDLER GEAR with the positioning alignment hole Ⓑ of the SIDE BOARD as shown in Fig. 5-2-3 at this time.
   Also align the positioning alignment holes ⑬ of PINION GEAR and LOCK GEAR with the positioning alignment hole ⑫ of GEAR BRACKET by referring to Fig. 5-2-2. After mounting them, check to be sure that FL START SWITCH ⑭ is in the ON state shown in Fig. A.
8) Remount the COMPL CASSETTE MECHANISM as instructed in 5-2-1.

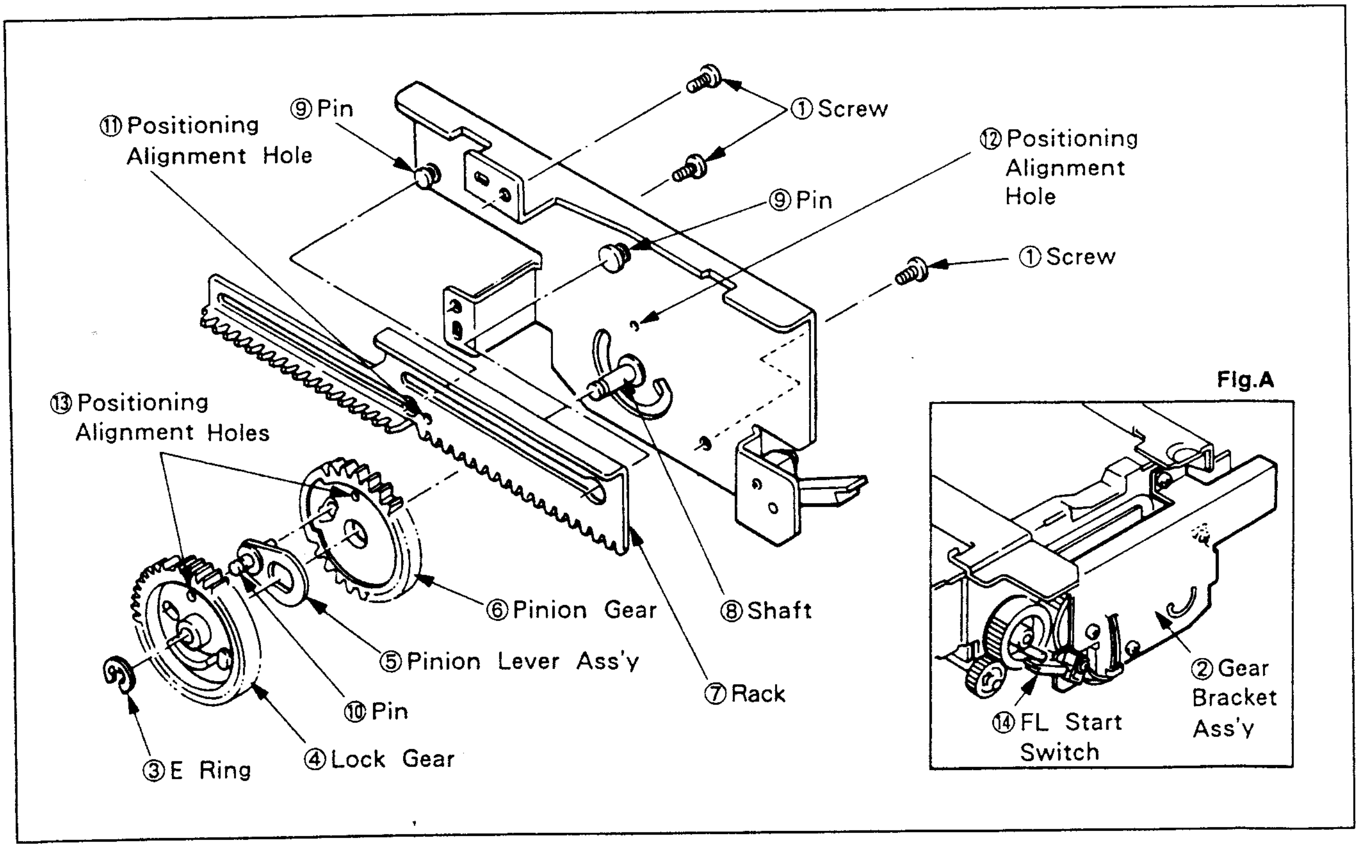

⑪ Positioning Alignment Hole
⑨ Pin
① Screw
⑫ Positioning Alignment Hole
⑨ Pin
① Screw
⑬ Positioning Alignment Holes
⑥ Pinion Gear
⑤ Pinion Lever Ass'y
⑩ Pin
③ E Ring
④ Lock Gear
⑧ Shaft
⑦ Rack
Fig.A
② Gear Bracket Ass'y
⑭ FL Start Switch

Fig. 5-2-2. Gear Bracket Ass'y

5-2-4. Cassette Drive Gear (left) (See Fig. 5-2-4)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in 5-2-1.
2) Remove the E ring ②.
3) Open the hook ③, then remove the LEVER GEAR ASS'Y L ④. Take care not to open the hook ③ too much, otherwise it may get deformed or broken. If it does, replace it.
4) Remove the SPRING COIL ⑤ from the LEVER GEAR ASS'Y L ④.

2. Remounting

1) Apply grease to the axle ⑨ and shaft ⑩.
2) Align with the COUPLE GEAR L ⑬ and the IDLER GEAR L ⑥ as shown in Fig B.
3) Hook the SPRING COIL ⑤ to the LEVER GEAR ASS'Y L ④.
4) Mount the LEVER GEAR ASS'Y L ④ onto the axle ⑨ and the shaft ⑩. Align with the IDLER GEAR L ⑥ as shown in Fig. B.
5) Mount the COMPL CASSETTE MECHANISM onto the chassis as instructed in 5-2-1.

Note: The end of the DOOR OPEN LEVER ⑦ leans against the front side of the CASSETTE DOOR ⑪ as shown in Fig. A.

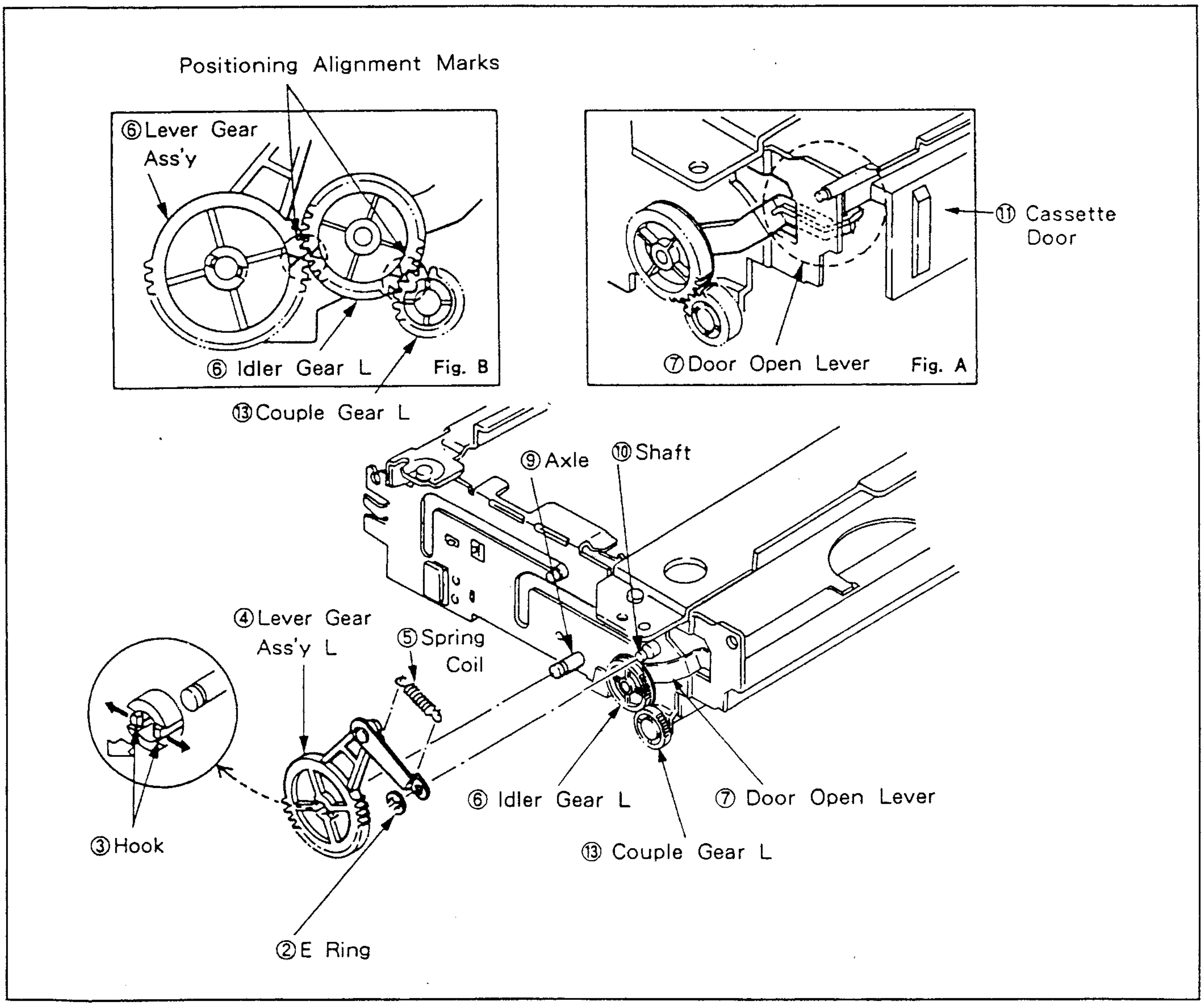

Positioning Alignment Marks
⑥Lever Gear Ass'y
⑥ Idler Gear L
Fig. B
⑬Couple Gear L
⑪ Cassette Door
⑦Door Open Lever
Fig. A
⑨Axle
⑩Shaft
④Lever Gear Ass'y L
⑤Spring Coil
③Hook
⑥ Idler Gear L
⑦ Door Open Lever
⑬ Couple Gear L
②E Ring

Fig. 5-2-4. Cassette Drive Gears (Left Side)

5-6. PINCH ROLLER PRESSURE MECHANISM (See Fig. 5-6-1.)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in 5-2-1.
2) Remove the COMPL HEAD BRACKET as instructed in 5-5.
3) Remove the PINCH SPRING COIL ①.
4) Remove the special washer ②, then remove the PINCH LEVER ASS'Y ③.
5) Remove the REV GUIDE LEVER SPRING COIL ④.
6) Remove REV GUIDE LEVER ASS'Y ⑥ from the hook ⑤ of the plastic bearing on the bottom side. Use a jig VHJ-0073 shown in Fig. 5-6-2 to widen the hook of the plastic bearing. By so doing, the above removal of the REV GUIDE LEVER ASS'Y ⑥ can be made more easily. Care should be taken to avoid pushing the jig VHJ-0073 too much. Pushing it too hard may damage the hook in an extreme case.
7) Remove the SLIDE BRAKE SPRING COIL ⑦.
8) Remove the special washer ⑧, then remove the PINCH CAM LEVER ASS'Y ⑨.
9) Remove the ACT PINCH SLIDE ASS'Y ⑩.

Note: If the hook ⑤ of the plastic bearing is damaged, reference should be made to Section 3. "Method of Repairing the Bearing Section of REV GUIDE LEVER ASS'Y".

2. Remounting

1) Apply grease to pins ⑫/⑬ and axles ⑯/⑱.
2) Apply grease to the ACT PINCH SLIDE ASS'Y pin ⑰.
3) Set the INITIAL mode with the mode selector (VHJ-0050).
4) Mount the ACT PINCH SLIDE ASS'Y ⑩ onto pins ⑫ and ⑬.
5) Insert the pin ⑭ of the PINCH CAM LEVER ASS'Y ⑨ into the MAIN CAM ⑪ GROOVE 1, and mount onto the axle ⑯ while inserting the ACT PINCH SLIDE ASS'Y pin ⑰ of the ACT PINCH SLIDE ASS'Y into the hole ⑮.
6) Mount the special washer ⑧ onto the axle ⑯.
7) Hook the SLIDE BRAKE SPRING COIL ⑦ to the plastic pin ⑲.
8) Mount the REV GUIDE LEVER ASS'Y ⑥ to the plastic molding bearing, then fix it with the hook ⑤ at the bottom.
9) Hook the REV GUIDE LEVER SPRING COIL ④.
10) Mount the PINCH LEVER ASS'Y ③ to the axle ⑱.
11) Mount the special washer ② to the axle ⑱.
12) Hook the PINCH SPRING COIL ① between the ACT PINCH SLIDE ASS'Y ⑩ and the PINCH LEVER ASS'Y ③.
13) Mount the COMPL HEAD BRACKET as instructed in 5-5.
14) Mount the COMPL CASSETTE MECHANISM as instructed in 5-2-1.
15) Perform ACE head adjustment as instructed in 6-4.

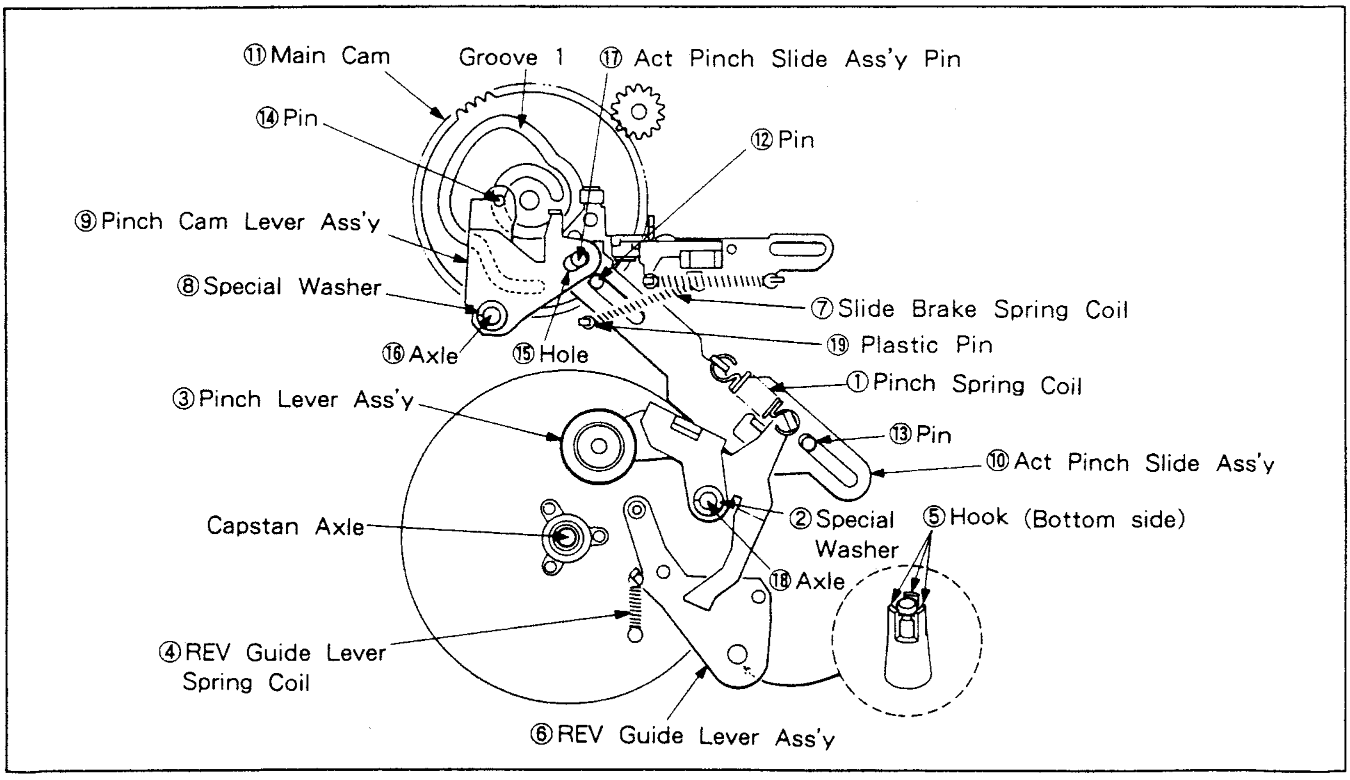

⑪Main Cam
Groove 1
⑰ Act Pinch Slide Ass'y Pin
⑭Pin
⑫Pin
⑨Pinch Cam Lever Ass'y
⑧Special Washer
⑦Slide Brake Spring Coil
⑲ Plastic Pin
⑯Axle
⑮Hole
③Pinch Lever Ass'y
①Pinch Spring Coil
⑬Pin
⑩Act Pinch Slide Ass'y
Capstan Axle
②Special Washer
⑤Hook (Bottom side)
⑱Axle
④REV Guide Lever Spring Coil
⑥REV Guide Lever Ass'y

Fig. 5-6-1. **Pinch Roller Pressure Mechanism**

5-4. TAPE LOADING MECHANISM

5-4-1. Main Parts of the Tape Loading Mechanism (See Fig. 5-4-1.)

1. Removal

1) Remove connectors from the DRUM MOTOR board (SV-5).
2) Remove the three screws ①, then remove the REINFORCE BRACKET ②.
3) Remove the three special washers ③ and ⑦, then remove the spacer ⑥, LOAD RACK ④ and MAIN CAM ⑧.
4) Unhook the LOAD GEAR T hook ⑩, then remove the LOAD GEAR T ⑨ as shown in Fig. A, with the SPRING COIL ⑪ and the LOAD LEVER ASS'Y T ⑫ attached to it.
5) Unhook the LOAD GEAR S hook ⑭, then remove the LOAD GEAR S ⑬ as shown in Fig. B, with the SPRING COIL ⑮ and the LOAD LEVER ASS'Y S ⑯ attached to it.

Note: Take care not to open the LOAD GEAR hooks too much, otherwise they may be deformed or broken. If they are, replace them.

2. Remounting

1) Apply grease to the hole ⑰ of the LOAD LEVER ASS'Y S ⑯, as shown in Fig. B.
2) Apply grease to the hole ㉒ of the LOAD LEVER ASS'Y T ⑫ as shown in Fig. A, and to the sections of the LOAD GEAR T ⑨ as indicated with an arrow in Fig. C.
3) Apply grease to GROOVE 1, GROOVE 2 and to the outer side of the MAIN CAM ⑧, shown in Fig. E.
4) Apply grease to the three oval holes of the LOAD RACK ④ as shown in Fig. D.
5) Apply grease to the outer surface of axles ⑲, ⑳ and ㉘.
6) After assembling as shown in Fig. B, mount the LOAD GEAR S ⑬ onto the axle ⑲. Insert the ROLLER BASE S pin ⑱ into the hole ⑰ of the LOAD LEVER ASS'Y S.
7) After assembling as shown in Fig. A, mount the LOAD GEAR T ⑨ onto the axle ⑳. When doing so, align the INITIAL mode positioning alignment holes ㉑ of the LOAD GEAR S ⑬ and the LOAD GEAR T ⑨ to the INITIAL mode position. Insert the ROLLER BASE T pin ㉓ into the hole ㉒ of the LOAD LEVER ASS'Y T ⑫.
8) Mount the MAIN CAM ⑧ onto the axle ㉖. At that time, make sure that the INITIAL mode positioning alignment holes ㉕ of the MAIN CAM ⑧ and the MODE CAM ㉔ match the INITIAL mode positioning alignment holes ㉞ of the MECHANISM CHASSIS. Also check to be sure that the pin ㉗ of the CAM PINCH LEVER ASS'Y is put in the GROOVE 1 of the MAIN CAM as shown in Fig. E.
9) Mount the LOAD RACK ④ onto the axles ㉖ and ㉛. At that time, set the INITIAL mode positioning alignment marks ㉚ of the LOAD RACK ④ and the LOAD GEAR T ⑨ to the INITIAL mode position. Insert the LOAD RACK pin ㉙ into the MAIN CAM GROOVE 2 as shown in Fig. E.
10) Mount the spacer ⑥ and the special washer ⑦ onto the axle ㉖.
11) Mount the two special washers ③ onto the two axles ㉛.
12) Mount the REINFORCE BRACKET ② with the three screws ①.
13) Insert the connector into the DRUM MOTOR board (SV-5).
14) Confirm that loading and unloading are performed smoothly.

Note: Be sure to perform INITIAL mode positioning of cams and gears precisely.

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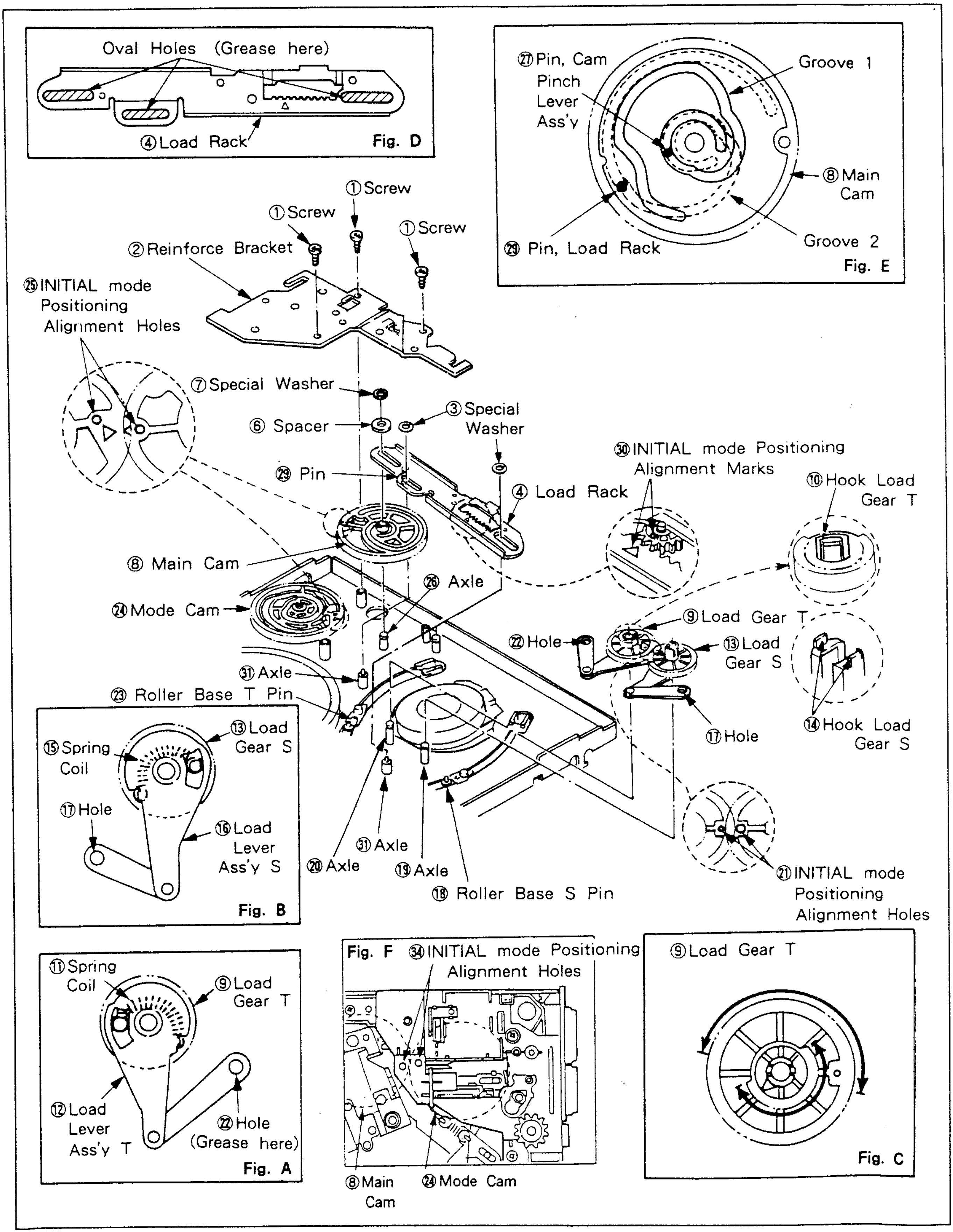

Oval Holes (Grease here)
④Load Rack
Fig. D
㉗Pin, Cam Pinch Lever Ass'y
Groove 1
⑧Main Cam
Groove 2
㉘ Pin, Load Rack
Fig. E
①Screw
①Screw
①Screw
②Reinforce Bracket
㉕INITIAL mode Positioning Alignment Holes
⑦Special Washer
⑥ Spacer
③Special Washer
㉙ Pin
㉚INITIAL mode Positioning Alignment Marks
④ Load Rack
⑩Hook Load Gear T
⑧ Main Cam
㉖ Axle
㉔Mode Cam
⑨Load Gear T
㉒Hole
⑬Load Gear S
㉛Axle
㉓ Roller Base T Pin
⑭Hook Load Gear S
⑰Hole
⑮Spring Coil
⑬Load Gear S
⑰Hole
⑯Load Lever Ass'y S
Fig. B
㉛Axle
⑳Axle
⑲Axle
⑱ Roller Base S Pin
㉑INITIAL mode Positioning Alignment Holes
⑪Spring Coil
⑨Load Gear T
⑫Load Lever Ass'y T
㉒Hole (Grease here)
Fig. A
Fig. F
㉞INITIAL mode Positioning Alignment Holes
⑧Main Cam
㉔Mode Cam
⑨Load Gear T
Fig. C

Fig. 5-4-1. Loading Mechanism Main Parts

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5-8-4. Reel Pulley and Friction Gear Ass'y (See Fig. 5-8-4.)

1. Removal

1) Remove the REEL DRIVE BELT ③.
2) Remove the special washer ④, then remove the REEL PULLEY ⑤.
3) Remove the special washer ⑥, then remove the FRICTION GEAR ASS'Y ⑦ and the washer ⑧.

2. Remounting

1) Apply one drop of oil to the parts of axles ⑨ and ⑩ indicated with arrows.
2) Mount the washer ⑧ and the FRICTION GEAR ASS'Y ⑦ onto the axle ⑨.
3) Mount the special washer ⑥ onto the axle ⑨.
4) Mount the REEL PULLEY ⑤ onto the axle ⑩.
5) Mount the special washer ④ onto the axle ⑩.
6) Set the REEL DRIVE BELT ③.

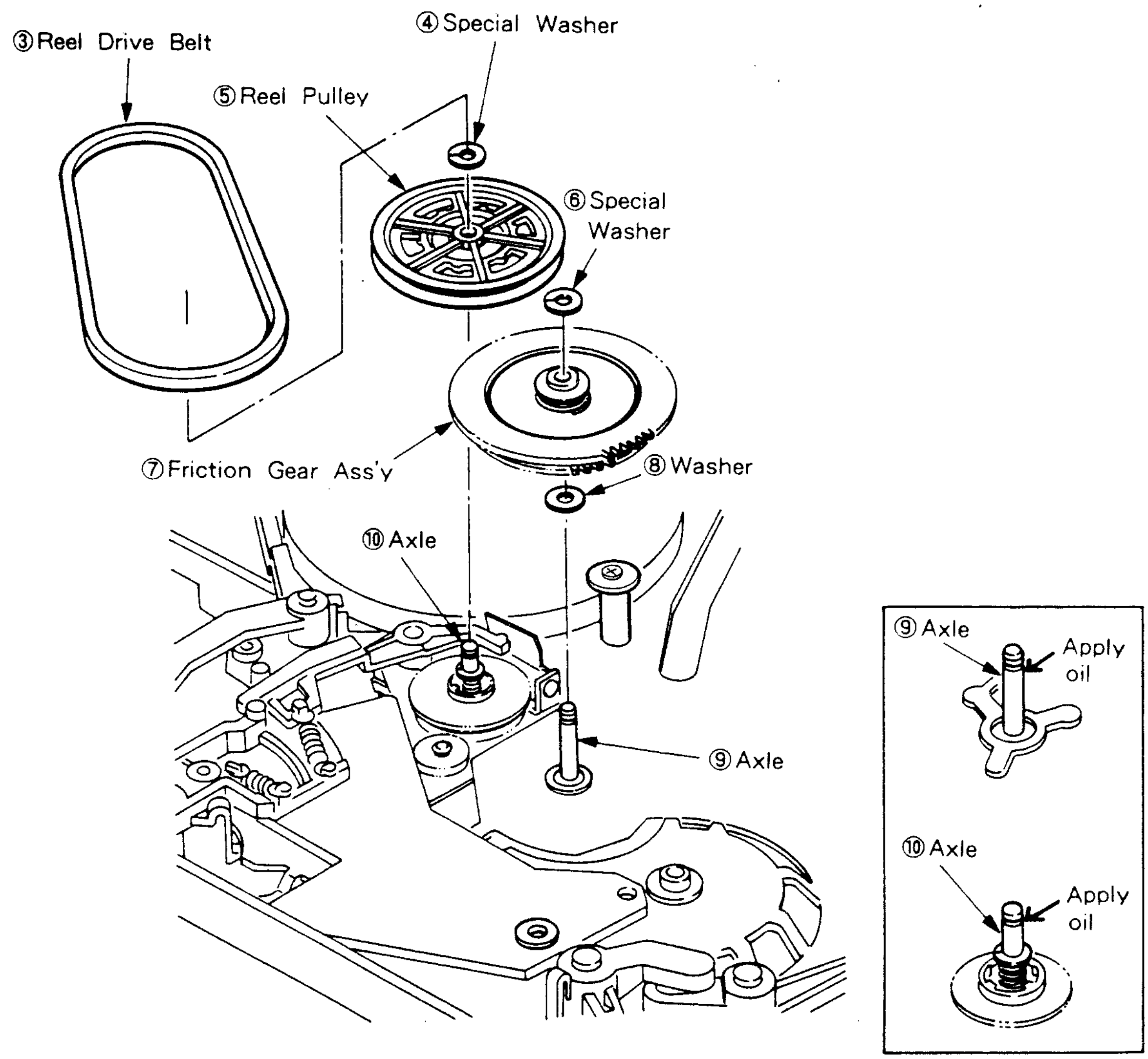

③Reel Drive Belt
④Special Washer
⑤Reel Pulley
⑥Special Washer
⑦Friction Gear Ass'y
⑧Washer
⑩Axle
⑨Axle
⑨Axle
Apply oil
⑩Axle
Apply oil

Fig. 5-8-4. Reel Pulley & Friction Gear

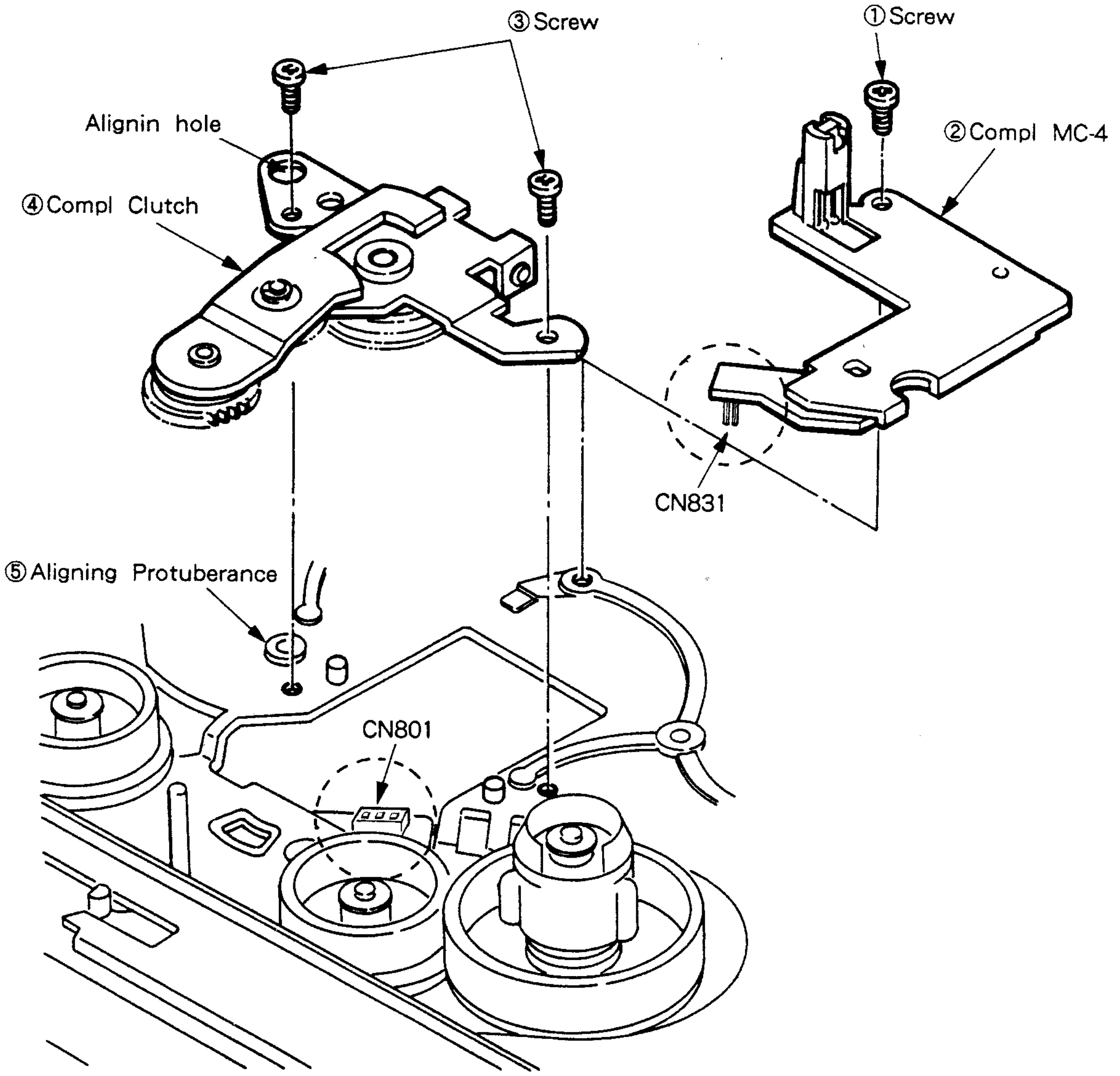
5-8-5. COMPL Clutch (See Fig. 5-8-5.)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in 5-2-1.
2) Remove the REEL DRIVE BELT and the REEL PULLEY as instructed in 5-8-4.
3) Remove the screw ①, then remove the COMPL MC-4 ②.
4) Remove the two screws ③, then remove the COMPL CLUTCH ④.

2. Remounting

1) Mount the COMPL CLUTCH ④ with the two screws ③, aligning it with the protuberance ⑤.
2) After inserting the CN831 (COMPL MC-4) into the CN801 (COMPL MC-1), mount the COMPL MC-4 with the screw ①.
3) Mount the REEL PULLEY and REEL DRIVE BELT as instructed in 5-8-4.
4) Mount the COMPL CASSETTE MECHANISM as instructed in 5-2-1.


③ Screw
① Screw
Alignin hole
② Compl MC-4
④ Compl Clutch
CN831
⑤ Aligning Protuberance
CN801

Note: The form of CN801 and CN831 differ from the P90 mechanism.

Fig. 5-8-5. Compl Clutch

5-10. FIXED GUIDE, FE HEAD LEVER ASS'Y

5-10-1. S-Side Fixed Guide and FE Lever Ass'y (See Fig. 5-10-1.)

1. Removal

1) Remove the special nut ①, then remove the GUIDE PIPE ③ and the special washer ② (lower), in that order.
2) Remove the SPRING COIL ⑤.
3) Remove the FTE HEAD connector, then remove the FE HEAD LEVER ASS'Y ⑦.

2. Remounting

1) Mount the FE LEVER ASS'Y ⑦ onto the axle ⑧.
2) Hook the SPRING COIL ⑤ between the chassis notch ⑨ and the FE LEVER ASS'Y hook ⑩.
3) Mount the special washer ② (lower), the GUIDE pipe ③ and the special nut ① to the axle ⑧, in that order. At that time, do not excessively tighten the special nut ① to avoid idle rotation of the axle rivet. The height of fixing guide on the inlet side is not required.
4) Connect the connector to the FTE HEAD.

Note : Some models do not have the impedance roller.

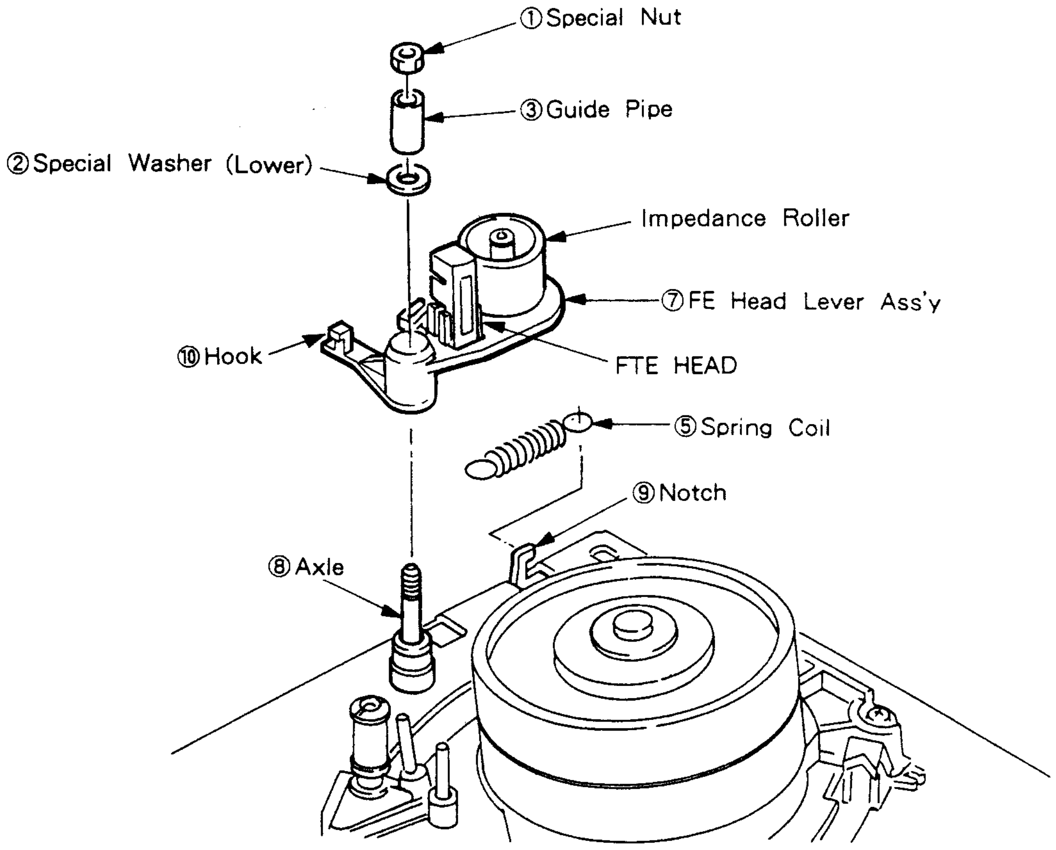

①Special Nut
③Guide Pipe
②Special Washer (Lower)
Impedance Roller
⑦FE Head Lever Ass'y
⑩Hook
FTE HEAD
⑤Spring Coil
⑨Notch
⑧Axle

Fig. 5-10-1. Fixed Guide (S) & FE Lever Ass'y

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5-10-3. Exit side Fixed Guide (See Fig. 5-10-3.)

1. Removal

1) Remove the CAP ①.
2) Remove the special NUT ②, then remove the special washer ③ (upper), the GUIDE PIPE ④, the special washer ③ (lower) and the sleeve ⑤, in that order.

2. Remounting

1) Mount the sleeve ⑤, the special washer ③ (lower), the GUIDE PIPE ④, the special washer ③ (upper) and the special NUT ②, in that order, to the axle ⑥.
2) Mount the CAP ① onto the axle ⑥.

Note: There is no need of height adjustment of the exit side fixed guide.

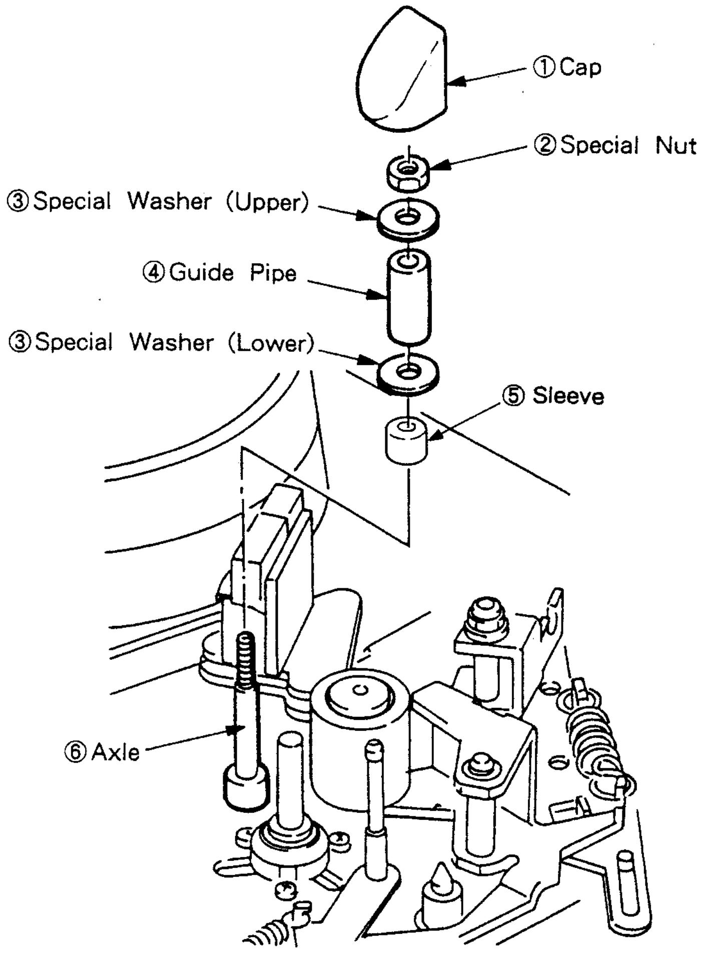

①Cap
②Special Nut
③Special Washer (Upper)
④Guide Pipe
③Special Washer (Lower)
⑤ Sleeve
⑥Axle

Fig. 5-10-3. Fixed Guide (T)

5-11. DRUM SECTION

5-11-1. Drum Motor(rotor, stator)(See Fig. 5-11-1.)

1. Removal

1) Referring to 5-4-1 in this SUPPLEMENT, remove the special washer and the LOAD RACK.
2) Remove the screw ①, then remove the CYLINDER EARTH ASS'Y ②.
3) Remove the two screws ③, then remove the ROTOR ④ and SPACER.
4) Remove the STATOR board connector ⑩.
5) Remove the three screws ⑤, then remove the STATOR ⑥.

2. Remounting

1) Mount the STATOR ⑥ with the three screws ⑤.
2) Mount the SPACER ⑪ on to the AXLE ⑫.
3) While aligning the ROTOR oval hole ⑦ with the ROTOR DISK hole ⑧, mount the ROTOR with the two screws ③.
4) Insert the connector ⑩.
5) While aligning the CYLINDER EARTH ASS'Y ② protuberance with the chassis hole ⑨, mount it with the screw ①.
6) Referring to 5-4-1 in this SUPPLEMENT, attach the LOAD RACK and the special washer. It is needed that the LOAD RACK is to be set correctly to the LOAD GEAR T.

Note 1: Use a torque driver (VHJ-0014) for mounting the STATOR ⑥ and the ROTOR ④. Set fastening torque to 3kg-cm.

Note 2: When the drum unit has been replaced, perform a tape path adjustment as instructed in 6-4. and perform a CH-1/CH-2 switching position adjustment of the servo circuit.

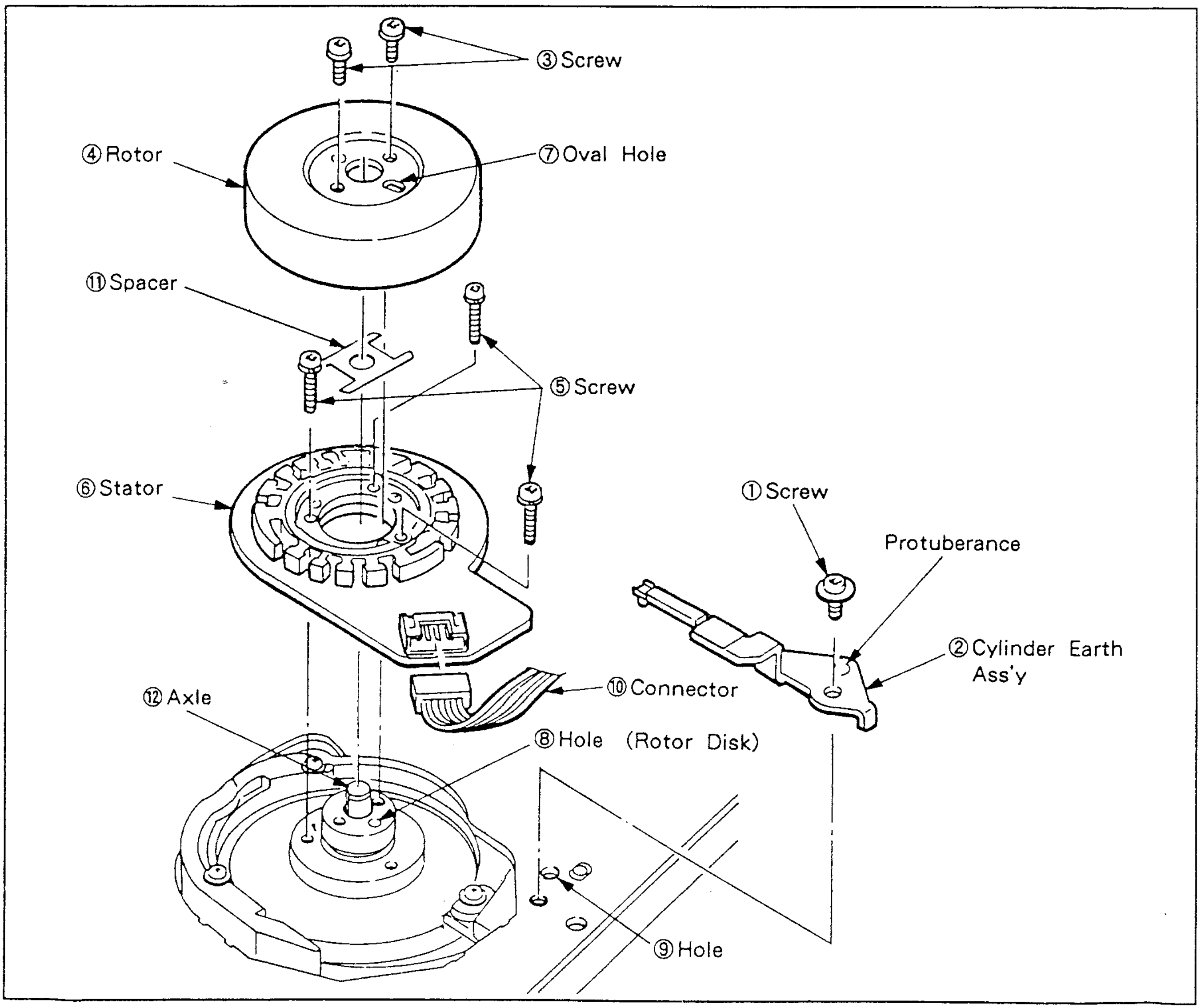

③Screw
④Rotor
⑦Oval Hole
⑪Spacer
⑤Screw
⑥Stator
①Screw
Protuberance
②Cylinder Earth Ass'y
⑫Axle
⑩Connector
⑧Hole (Rotor Disk)
⑨Hole

Fig. 5-11-1. Drum Motor

5-13. AUTO HEAD CLEANER MECHANISM (See. Fig. 5-13-1 • Fig. 5-13-2 • Fig. 5-13-3)

1. Removal

Note:
- Do not hold the ROLLER CLEANER ASS'Y ① by bare hand. Use tweezers and gloves not soiled with grease or dust, etc.
- When the cleaning function deteriorates and replacing only ROLLER CLEANER ASS'Y ①, there is no need to perform item 4).

1) Make sure that the ROLLER CLEANER ASS'Y ① is not pressed against a drum (cylinder).
2) Remove the PRE-AMP UNIT and the PRE-AMP BRACKET.
3) Remove screw ②, then lift up and remove the BRACKET CLEANER ASS'Y ③.
4) With the BRACKET CLEANER ASS'Y ③ is fixed by finger, turn the LEVER CLEANER ASS'Y ④ 35° to 40° to clockwise, then lift up and remove.
5) Remove the stop washer ⑤, then remove the ROLLER CLEANER ASS'Y ①.

2. Remounting

1) Mount the ROLLER CLEANER ASS'Y ① and the stop washer ⑤ to the axle ⑥ of LEVER CLEANER ASS'Y.
   Mount the ROLLER CLEANER ASS'Y ① so that the mark shown in Fig. 5-13-2 is up side. If the mark is down side, noise may occur.
2) Mount the SPRING COIL ⑧ and the LEVER CLEANER ASS'Y ④ to the axle ⑦ of BRACKET CLEANER ASS'Y. At this time, hook the SPRING COIL ⑧ to the hole ⑨ of the LEVER CLEANER ASS'Y and the bent part ⑩ of the BRACKET CLEANER ASS'Y. "A part" of the LEVER CLEANER ASS'Y should be under "B part" of the BRACKET CLEANER ASS'Y.
3) Fix the BRACKET CLEANER ASS'Y ③ on screw hole ⑫ by screw ②. Before fasten screw ②, insert hole ⑪ of the BRACKET CLEANER ASS'Y to axle ⑯, axle ⑦ to hole ⑬ to match positions. Pin ⑭ of the LEVER CLEANER ASS'Y should be run along the circumference of the MAIN CAM ⑮ not to be came off.
4) The upper side of the lower drum should be within approx. 2mm from the lower side of the ROLLER CLEANER ASS'Y as shown in Fig. 5-13-3.
5) Mount the PRE-AMP BRACKET and the PRE-AMP UNIT.

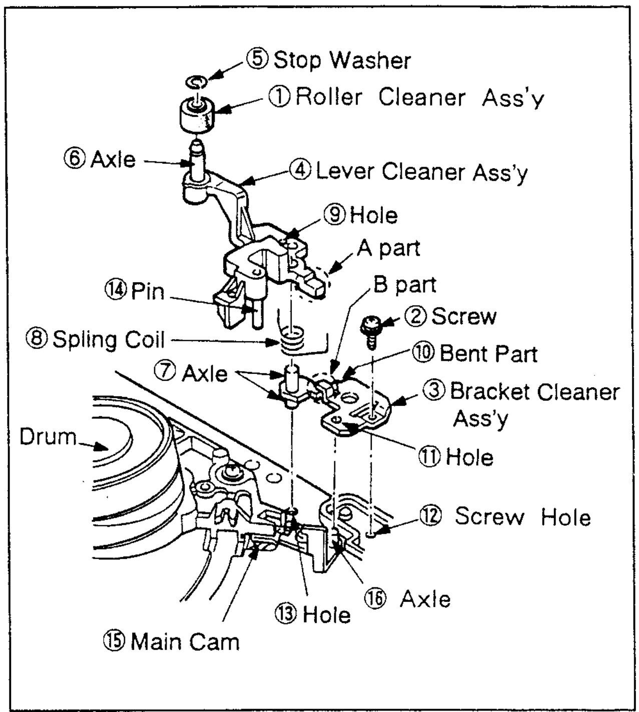
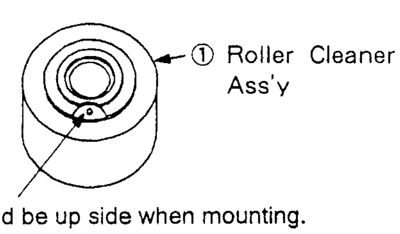

⑤ Stop Washer
① Roller Cleaner Ass'y
⑥ Axle
④ Lever Cleaner Ass'y
⑨ Hole
A part
⑭ Pin
B part
② Screw
⑧ Spling Coil
⑩ Bent Part
⑦ Axle
③ Bracket Cleaner Ass'y
Drum
⑪ Hole
⑫ Screw Hole
⑯ Axle
⑬ Hole
⑮ Main Cam

Fig. 5-13-1


① Roller Cleaner Ass'y

Mark should be up side when mounting.

Fig. 5-13-2

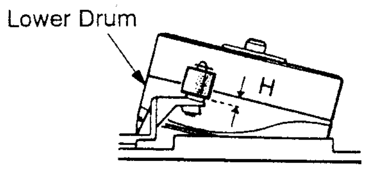

Lower Drum
H

Fig. 5-13-3

MEMO